THE BUILDER

a Journal for the

ARCHITECT & CONSTRUCTOR

VOL. CLVIII APRIL 19 1940 No. 5072

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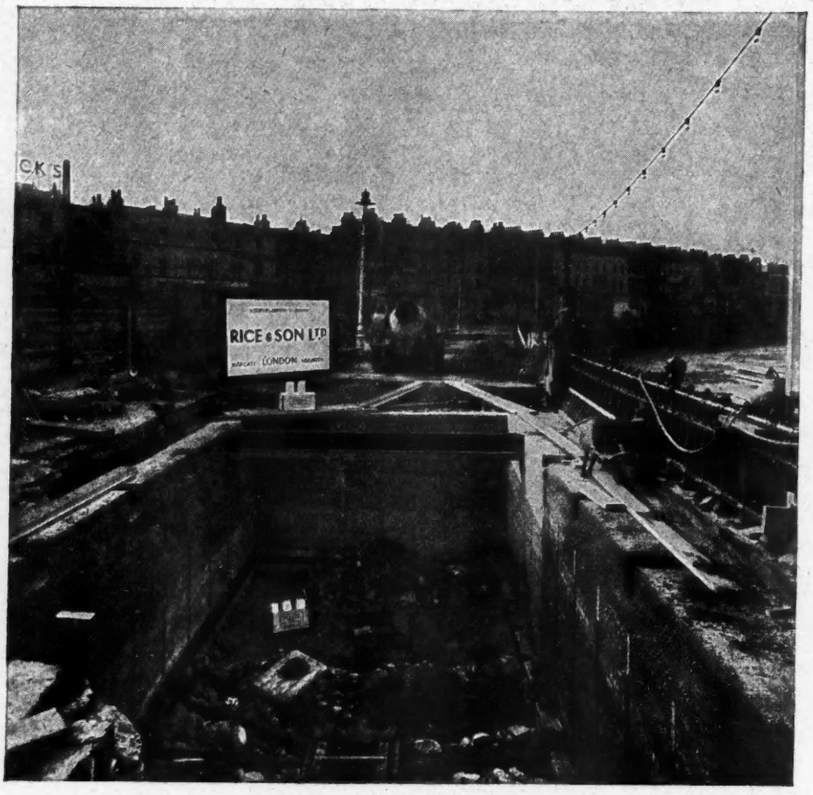

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THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

VOL. CLVIII APRIL 19 1940 No. 5072

APPROACH TO THE ACADEMY

IN just over a fortnight's time the Royal Academy of 1940 — the first war-time Academy—will be open. That the Architectural Room will reflect to any great extent the critical times in which we live is not perhaps to be expected. It may possibly show us something of war-time building, but is not likely to depart much from the normal, for the simple reason that in modern war the official view is that there is no need for architecture and little need for the professional services of architects. It is only when war ends and civil building begins again that the architect finds release for his pent-up energies. So it was in the last war; so it seems likely to be to an even greater extent in this. Nevertheless, every devotee of the Mistress Art will be curious to see what the Architectural Room has to show.

There are one or two things about architecture at the Academy that may be accounted constant factors. For example, the Room, with all its deficiencies, will show a fairly representative cross-section through current British architecture; there will be surprising omissions and still more surprising inclusions; and for many competent architects there is bound to be the disappointment of rejection, but while the accommodation remains so paltry it is difficult to see how this can be avoided.

The limitations of an exhibition of this kind must be appreciated for its deficiencies to be understood. To begin with, the Selection Committee can choose only from the works submitted to its judgment. If the good architects refrain from submitting their work, then the exhibition will be a poor one. Then a good deal of the wall area is taken up, rightly, by the work of Academicians, and the remaining space leaves little scope for the display of non-members' work, particularly when mounts and frames are larger than need be, as they often are. Many a good work must have been rejected because it failed to fit into a small space.

Then there is the question of taste. The Selection Committee changes its personnel from year to year, and the standard of judgment must vary. This probably explains why a work by a distinguished architect was rejected one year and accepted the next. Many architects must have had such an experience. In the case which we have in mind it is difficult to imagine a reason for rejection, for the architect is a recognised leader of the profession and really incapable of bad design. Accidents of this kind, no doubt, are always liable to happen.

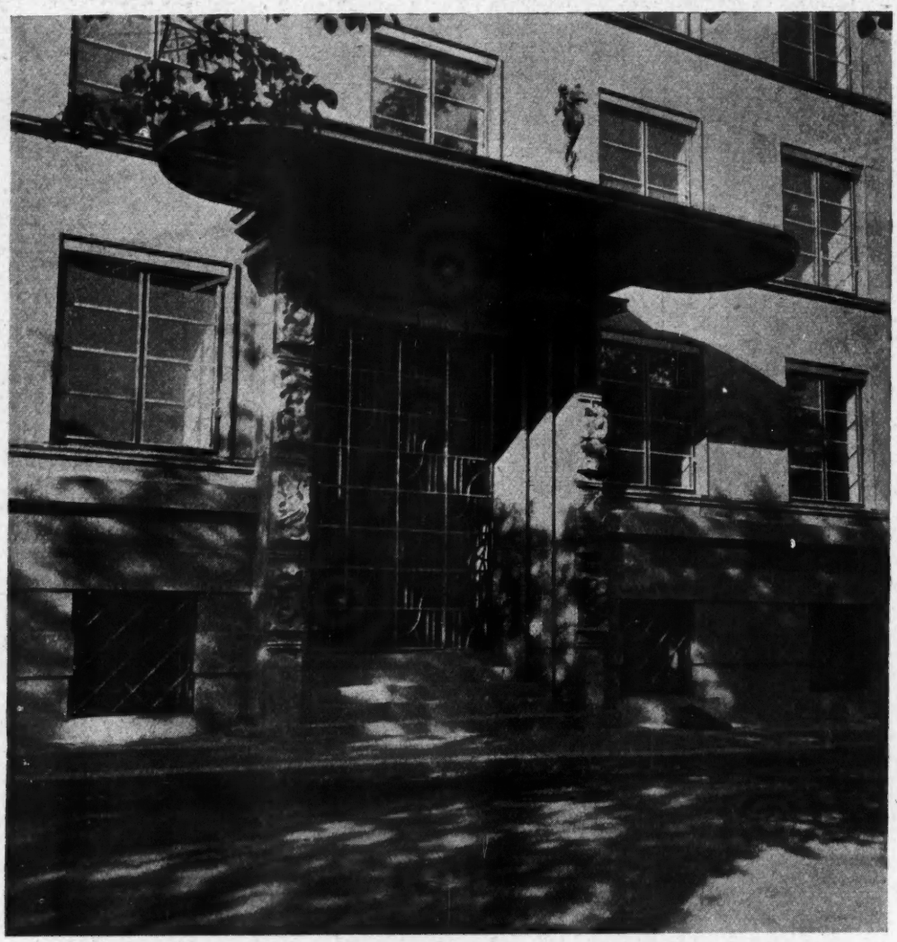
Finally, there is not likely to be anything in the Room to startle us by its unconventionality. The Academy has often been criticised because it fails to show progressive design, but the criticism is not perhaps a fair one, for it is the nature of an academy to be academic. One ought not to expect to see in an R.A. exhibition the sort of thing that is found in a Mars Group show or the annual display of one of our more advanced schools of architecture. However, it is a question whether much progressive work is submitted to the Academy, though it would be to the advantage of the exhibition if it were. The Academy, after all, is the most popular art exhibition of the year, and there should be no objection to a widening of its appeal. Also, it affords architects an opportunity of coming before the public eye that is provided nowhere else in quite the same way.

"Where are all the exciting things that are being done in architecture?" asked a distinguished journalist as he looked disappointedly round the Architectural Room last year. If he had seen any he would assuredly have mentioned them in his paper (one of great influence) and architects and architecture might have benefited.

If they have not done so this year, our modernists, on another occasion, might well try their luck with the Academy, which lately has shown signs of being a good deal more broad-minded in its outlook—witness the recent United Artists' Exhibition, which allowed a showing to works of the modern school of painting.

Generally in the judgment of architecture (apart from any question of the Academy) there is, in our view, a need for greater catholicity of outlook. The traditional is not necessarily bad, nor is the advanced necessarily perverse. There is room for both, and we see no reason why they should not co-exist; the preferences of clients (which are not altogether to be disregarded) will probably ensure that they do. The only test in judging works for a great public exhibition should be whether they are good of their kind. Architecture is not an exact science and individual taste must always be allowed for; but there are exemplars by which it should be possible to establish a reliable standard of judgment.

What we should like to see in the critical approach to architecture is less mere prejudice and greater tolerance for the good, whatever style, mode or manner it may follow. The selection of work for the Academy on this basis, provided the best architects of all schools of thought were willing to co-operate, would provide a conspectus of current architecture that would be of maximum value and interest. But there would have to be an increase in the accommodation.



THE NORWEGIAN SHIPOWNERS' ASSOCIATION BUILDING, OSLO.

Designed by Bjerke and Eliassen, this building was greatly admired by the members of the A.A. Excursion to Norway in 1934, memories of which tour will be revived by the Exhibition of Architectural Photographs of Norway and Denmark (from which this is taken), now showing at the Building Centre. The building is in grey-green granite and is well detailed. Bronze has been used for the projecting hood, which is ornamented with a seahorse. The photograph is by Mr. F. R. Yerbury.

NOTES AND NEWS

War Damage and Assessment.

THE possibility of air raids on a big scale in this country is obviously a development that must be kept in mind in the coming summer. A little wisdom before the event on the part of owners of buildings would help enormously in the making of assessments of damaged buildings if plans of the buildings before damage were available—particularly if such drawings gave constructional details. This applies especially to older buildings, whose records can seldom be found, and in such cases owners would be well advised to instruct their architects to make surveys accurate enough to show plans, sections and elevations of buildings before damage. Elevations might be photographed, but plans and sections should, of course, be measured and drawn.

"Two-Stage" Air Raid Shelters.

WHAT may prove to be a significant change in the development of schemes for A.R.P. shelters has just taken place, states the A.R.P. Co-ordinating Committee in a memorandum issued on Wednesday. Government technical advisers, after a detailed examination extending over nearly four months, have reported favourably upon a type of shelter which departs radically from those so far providing the backbone of the official scheme.

The design was submitted to Sir John Anderson by the Committee in December last, and its most important feature is that the shelter may be constructed in two stages. In the first stage, which can be completed in five weeks, at a cost of £6 to £7 per head, the shelter provides rather greater safety than the standard covered and lined trench; while in the second stage heavy protection may be added to provide completely bombproof protection. The material used is concrete, and as the shelter may be either above or below ground, it is suitable for both dry and waterlogged soils. To localise the effects from a bomb, the shelter is made up of compartments each containing from 50 to 80 persons. This design was illustrated in *The Builder* for December 22 last.

In informing the Committee of the results of the examination, Sir John Anderson makes it clear that there is no intention of modifying the official policy of "dispersed" or "family" shelters, but that in cases where shelters—mainly public shelters—must be of considerable size, the design should where possible follow the general lines advocated by the Committee.

In their reply to Sir John Anderson, which was sent on April 17, the Committee point out that it is not of much use the Government's technical advisers approving the design unless the necessary steps are taken to implement the proposals. They therefore ask that the local Councils who are responsible for building shelters shall be informed of the design so that it may be generally adopted.

Building and Evacuation: a Conference.

THE School of Planning and Research for National Development has arranged a conference on "The Building Industry in Relation to Evacuation." It will take place on Thursday, April 25 (5.30 p.m. for 6 p.m.), at the Building Centre, 158, New Bond-street, W.1. Sir Alfred Hurst, K.B.E., C.B., Chairman, the London Builders' Conference, will occupy the chair, and representatives of builders, operatives, materials manufacturers, local authorities, architects, small traders, and other bodies interested have been invited to speak. Examples of experimental solutions of evacuation will be on exhibition during the evening. The conference will be open to the public, admission free.

A.A. Coming Events.

A JOINT meeting of the junior members of the A.A. and the R.I.B.A. will be held in the library at the A.A., 36, Bedford-square, at 6.30 p.m. on Thursday, May 2, when Mr. D. Clarke Hall, A.R.I.B.A., will speak on "The Case for Prefabrication in Building." Prominent members of the building industry have also been invited to speak. Light refreshments will be served at 6 p.m.

The annual reception will take place at the A.A. on Thursday, May 16, at 8.30 p.m., and members are reminded that this year, owing to limited accommodation, they must apply for tickets of admission.

Building in War Time.

A SERIES of lectures is to be given at the Building Centre as follows:—

Tuesday, April 23, 6 p.m.: "The Problems of War-time Building," by R. Fitzmaurice, B.Sc., A.M.I.C.E.; 6.45 p.m.: "Timber for War-time Uses," by E. H. B. Boulton, M.C., M.A. (Chairman, Howard M. Robertson, M.C., F.R.I.B.A., S.A.D.G.).

Tuesday, April 30, 6 p.m.: "Cement and Concrete Products," by Major R. A. B. Smith, M.C. (Chairman, N. C. Macnamara, M.Inst.M.E.).

Thursday, May 2, 6 p.m.: "Clay Products," by Col. C. W. D. Rowe, M.B.E., T.D.; 6.45 p.m.: "Plaster and Plaster Boards," by G. H. Ellis (Chairman, John Gloag).

Tuesday, May 7, 6 p.m.: "Steel," by C. J. Kavanagh; 6.45 p.m.: "Glass," by Geoffrey Pilkington (Chairman, Sir Owen Williams, K.B.E.).

Application for tickets, which will be issued free, should be addressed to Mr. F. R. Yerbury, Director, the Building Centre, 158, New Bond-street, W.1.

COMING EVENTS

Friday, April 19.—Association of Architects, Surveyors and Technical Assistants. Meeting at 62, Woodhouse Lane, Leeds 2. 7 p.m. Speaker, Mr. A. W. Barr, Secretary.

Tuesday, April 23.—Housing Centre. Luncheon. Mr. A. C. Richmond on "Land Settlement." 1 p.m.

Tuesday, April 23.—Institution of Civil Engineers. Mr. J. E. Bostock on "Remodelling of the Assyut Barrage, Egypt." 5.30 p.m.

Tuesday, April 23.—Institution of Structural Engineers (Yorkshire Branch). Mr. T. J. Gueritte on "New Developments in Pre-stressed Concrete Construction," Hotel Metropole, Leeds. 7 p.m.

Thursday, April 25.—Institution of Structural Engineers. Mr. Oscar Borer on "Recent Reconstruction of Locks and Control Structures." 11, Upper Belgrave-street, S.W.1. 5.30 p.m.

Public Health Officers at Leeds.

A JOINT meeting of the Royal Sanitary Institute, the Yorkshire Branch of the Society of Medical Officers of Health, and the North-Eastern Centre of the Sanitary Inspectors' Association, will take place in the City Museum, Leeds, on Saturday, April 27, at 10 a.m. A discussion on "The Garchey System of Refuse Disposal" will be opened by Professor J. Johnstone Jervis, Medical Officer of Health, Leeds, and Mr. R. A. H. Livett, A.R.I.B.A., Housing Director of Leeds, will introduce the subject of "Modern Flat Building." In the afternoon the members will inspect the Quarry Hill flats, one of the largest blocks of flats in the country, in which the refuse is disposed of by the Garchey system, and also Shaftesbury House, a new municipal hostel for working men and women.

The Standard Method of Measurement.

IT may be remembered that in 1935 a revised edition of the Standard Method of Measurement was issued. As the result of some years of experience in its application, questions have from time to time been put to the Joint Committee by users of the document, many of which have brought out points of interest.

The answers to the questions have been given after careful consideration, and, in the belief that these are of assistance in encouraging the uniform interpretation of the document, the Joint Committee have included them as an appendix in the latest reprint. In order, however, that purchasers of the previous prints of the document may have the advantage of the information now published, the Joint Committee have issued separately a pamphlet containing such questions and answers, which may be obtained, on application to the Chartered Surveyors' Institution, at the price of 1s. post free.

Professional Announcements.

The address of MR. H. T. B. BARNARD, F.R.I.B.A., is now 3, Gower-street, Bedford-square, W.C.1. (Telephone: Museum 9951.)

MESSRS. OSCAR A. BAYNE and R. COTTERELL BUTLER, of 90, Ebury-street, S.W.1, have now opened a permanent provincial office at 3, Park-street, Hatfield, Herts. Telephone: Hatfield 2643. All communications should now be addressed to this office and not to the temporary address at Cockfosters.

IN 1915.

EXTRACT FROM *The Builder*, APRIL 16.

As part of the settlement arrived at between Messrs. Lever Bros., Ltd., and the City Corporation in regard to the acquisition of Sunlight Wharf in connection with the building of St. Paul's Bridge, Messrs. Lever undertake to erect new premises on land to be leased by the Corporation, the cost of which up to £40,000 will be borne by the municipal authority.

*** This followed a competition for designs for a bridge, decided just before the war in favour of Mr. (afterwards Sir) George Washington Browne, for whose design *The Builder* "could not profess much enthusiasm." Disputes as to the danger to St. Paul's Cathedral ensued, and the project was eventually abandoned.

WAR-TIME BUILDING PRACTICE

By R. Cotterell Butler, A.R.I.B.A.

15.—SOCIAL SERVICE UNITS FOR EMERGENCY COMMUNITIES.

3.—THE COMMUNAL HALL.

UPON examination of the general planning diagrams illustrated in last week's issue of this series, it should be apparent that the plan elements composing almost any social service centre may be divided into three groups having somewhat dissimilar characteristics:

First, there is the communal hall, and associated space for outdoor sport. The predominating planning consideration in this connection is obviously the maintenance of the maximum flexibility in order that as many activities as possible may be provided with adequate accommodation, within a common area.

Secondly, we have those plan elements which need to house a much more limited variety of activities, such as cooking and sanitation units.

Between these two extremes we have a third group of units which are required to provide alternative accommodation, but in which considerable distinction may be drawn between the primary and secondary functions of the units. In this group may be included: changing rooms, occasionally to be used as dressing rooms for theatrical performances, and medical service rooms—for instance a dental clinic—to be used perhaps once a week for some other health service.

While every plan element in the centre must be closely related to the others (particularly in the case of the first scheme illustrated last week) it is practicable, in order to analyse the different factors controlling the various elements as easily as possible, to discuss them under separate groups.

THE COMMUNAL HALL AND ITS ASSOCIATED SERVICE ELEMENTS.

In this article it is proposed to discuss the communal hall, together with those service elements directly connected with it, with the exception of the kitchen group, which merits separate consideration.

In subsequent articles it is hoped to devote space to the question of cooking arrangements, and medical and educational services, each of which presents a distinct architectural problem.

Two main considerations will generally determine the nature of the accommodation to be provided within the communal hall itself:

THE TYPE OF PERSONNEL.—(Male, Female, Male and Female, Adult, Child, Industrial, Business.)

THE LOCATION OF THE CENTRE.—(The facilities to be included in the centre, against those existing already outside.)

Where plan elements must serve specific activities such as medical or education, there is likely to be greater variation in accommodation requirements than in the case of the communal hall, and consequently the plan-form of the hall may more readily be standardised. Apart from the fact that only facilities for providing refreshments (and not complete meals) are allowed for in Example 1,* the three planning examples illustrated have more or less similar types of communal hall.

DIAGRAM 1, illustrated on the facing page, indicates a typical plan arrangement for a communal hall, providing dining accommodation, and applicable to community centre schemes 2 and 3.

The following schedule of accommodation and fittings should be read in conjunction with the diagram. [NOTE.—The references in italics indicate general modifications which may be introduced when other types of personnel (referred to above) are under consideration.]

Schedule of accommodation and fittings for typical communal hall group. Applicable to the requirements of an adult personnel of one sex, engaged in industrial or business work.

Plan Element.	Accommodation and Fittings.
Hall	Stores: Excess chairs.[a] Sports equipment. Gym. equipment. Table stores and/or folding tables.[b] Service counter for cafeteria. Removable screens. Periodical and book racks.[c] Verandah.
Stage	Small permanent stage. Stage extension units. Changing rooms for visiting artists.[d] "Prop." stores. Cinema projector equipment.[e] Radio and gramophone equipment.
Changing Rooms	Cubicles.[f] Lockers. Baths: Shower type.[g] Plunge type.[f] Foot type.[f] Lavatory basins.
Lavatory Accommodation	W.C.s. Urinals. These should be separate from changing room group. Entrances should be arranged to allow direct access from hall and exterior, as well as easy access from changing rooms.
Kitchen Accommodation	See later article.

a Essential in Type 1.

b Not generally necessary in Type 1.

c Not essential for books where silence rooms are provided.

d The necessity for these depends upon type of personnel, and whether accommodation for both sexes is provided in changing rooms.

e If possible this should be "back-stage type" in schemes 2 *and* 3, *unless projection room is conveniently possible at opposite end of hall to stage.*

f Provision of these depends upon type of personnel and may be dispensed with in many cases.

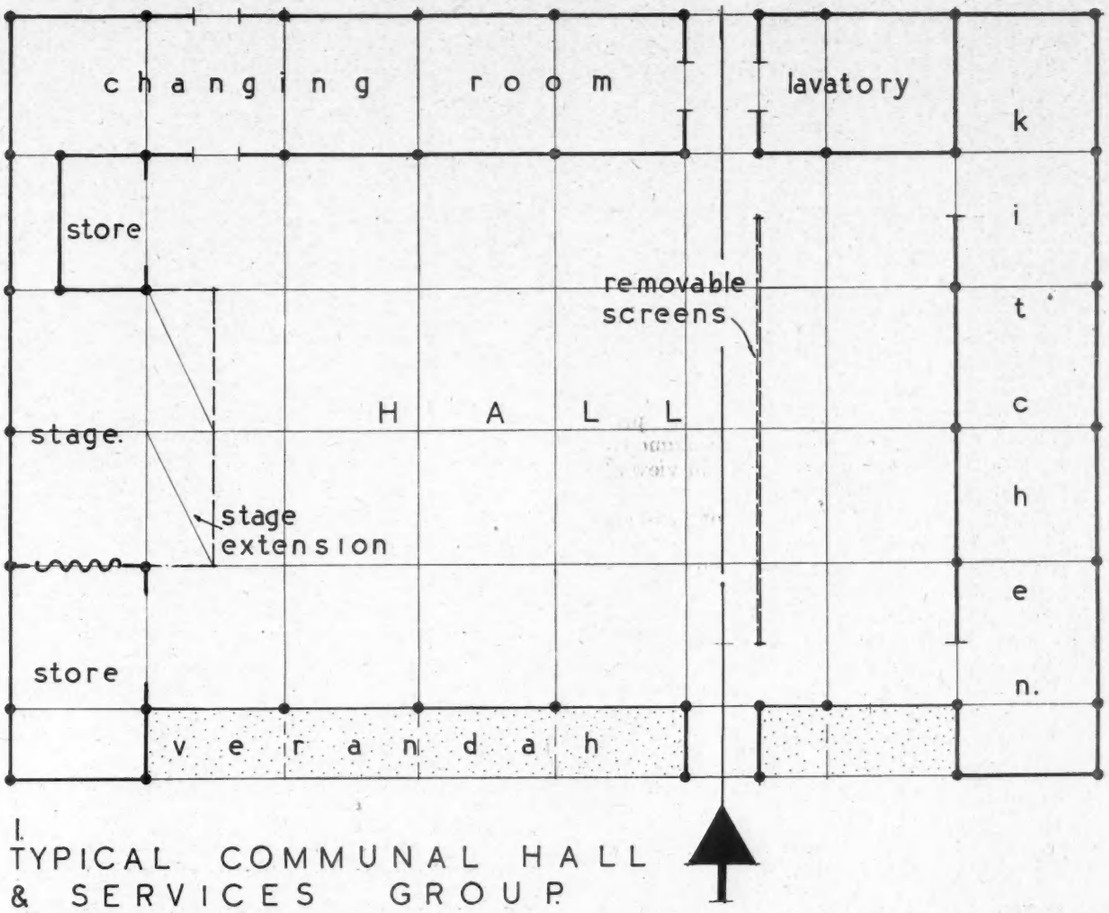
g Essential for almost all types.

Diagrams 2–5 illustrate the various accommodation arrangements which may be employed in a typical communal hall, of the type illustrated in Diagram 1, to provide accommodation for a variety of activities with the lowest possible economic outlay.

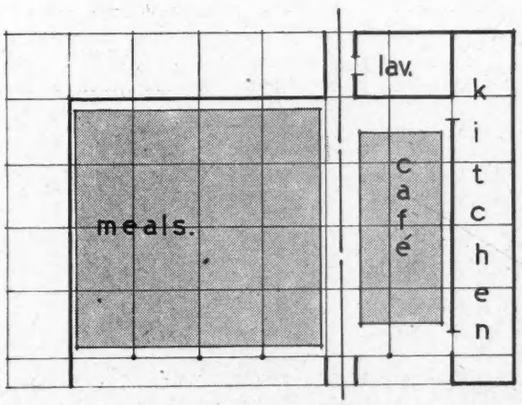
The successful operation of this sort of project depends to a very great extent upon the organisation which may be introduced into the life of the community using the social centre.

Carefully arranged programmes—as well thought out as a dietitian's menu—will not only help to provide the

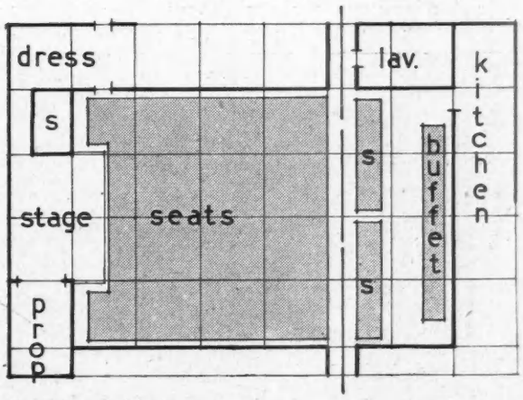
* General Planning Diagrams: *The Builder*, April 12, p. 441.



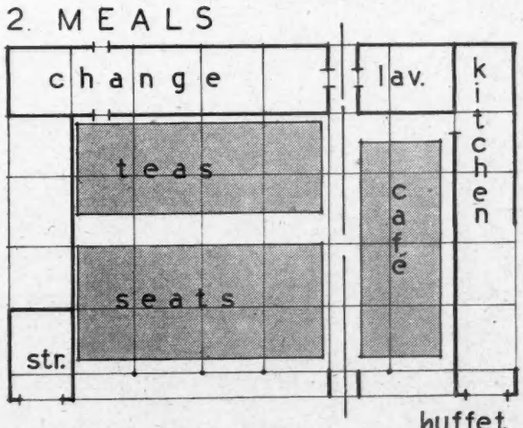
1.
TYPICAL COMMUNAL HALL & SERVICES GROUP



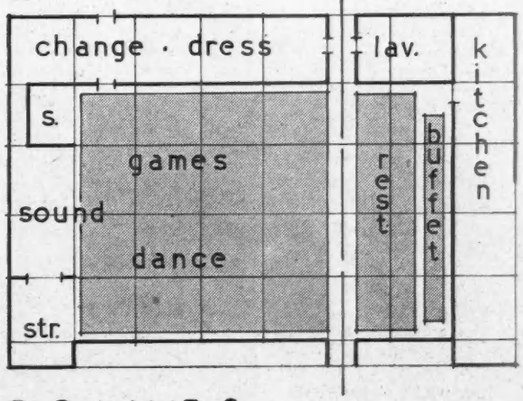
2. MEALS



3. VISUAL



4. SPORT



5. GAMES

maximum benefits for the community, but will avoid unnecessary labour in varying the layout of the hall.

DIAGRAM 2. MEALS. Layout providing dining accommodation for average complement of centre, together with facilities for light refreshments and rest.

Light tables are removed from store or folded out from walls† into main communal space.

Refreshment buffet in operation for light meals and after lunch relaxation (coffee, etc.).

DIAGRAM 3. VISUAL ENTERTAINMENT OR EDUCATION.—Layout providing auditorium accommodation for numbers above full complement with facilities for light refreshments.

Tables stored. Chairs arranged in relation to stage.
Refreshment buffet in operation.
Changing rooms acting as dressing rooms.
Extensions to stage in position if required.

DIAGRAM 4. OUTDOOR RECREATION. — Layout providing sports pavilion facilities, changing accommodation, teas, or other light refreshments, rest, and view of sports.

Seating arranged at open side of hall overlooking sports ground.
Table accommodation at "blind" side for teas or other organised meals.
Buffet in operation for light refreshments.
Changing rooms in full operation.

DIAGRAM 5. INDOOR GAMES AND DANCING.—Layout providing accommodation for organised games (the social efficiency of such individual indoor games as badminton is too low for emergency purposes).

All tables stored, chairs arranged around walls for spectators or those actually playing.
Buffet in operation.
Area between buffet and games-area reserved as rest space for those not playing, or for light refreshments.

GENERAL NOTES ON LAYOUT.

The dining arrangement (see Diagram 2), in conjunction with the stage, provides adequate seating for certain types of entertainment or education. Radio entertainment, talks and educational lectures not requiring extensive visual illustration, as well as concerts and musical entertainments, may be carried out quite satisfactorily without the necessity of re-arranging seating from that required for dining, thus saving considerable effort. This arrangement should provide for full complement.

The arrangements illustrated may be taken to be extremes in every case and where peak numbers are below the accommodation provided above, a number of different activities may be carried out at the same time—provided they may be arranged not to interfere with each other.

Thus, where auditorium seating of, say, half-full complement is required around the stage for between-meal lectures or entertainment, the remainder of the space may be occupied by dining accommodation which can operate independently.

It should be borne in mind, however, that if this arrangement is too easily applied, it indicates that organisation is being dispensed with at the expense of economy, as it will be obvious that less accommodation would be satisfactory if efficient organisation was maintained.

Optimum, all-round efficiency is likely to be a difficult thing to attain by theoretical analysis alone, and maximum efficiency is not likely to be obtained until the data which would be made available by examining the working of experimental emergency centres is at the disposal of the architect.

(To be continued.)

† See later article on Fittings and Equipment.

Subjects previously dealt with in this series are :—
"The Field of Activity," October 13.
"Billeting Accommodation," November 3, 10, 17.
"Development of Materials and Constructional Systems as Substitutes for Timber," December 8 and 15 and January 12.
"Roof Construction for Emergency Building Purposes," February 9, 16 and 23.
"Black-out : Current Technical Considerations" I.—March 8 ; II.—March 15.
"Social Service Units for Emergency Communities," March 29, April 12.
Copies of these issues may be obtained from the Publisher.

OBITUARY

W. E. Horsfall.

The death is announced of MR. WALTER EDWARD HORSFALL, of Halifax, formerly a Licentiate of the R.I.B.A. He was the eldest son of the late C. L. F. Horsfall, with whom he served articles, and by whom he was later taken into partnership. The firm was responsible for the erection of a large number of schools, churches and ecclesiastical buildings in the Halifax district. Mr. Horsfall was at one time a rating surveyor to the Halifax Corporation and advisory valuer to the Calder Valley Assessment Committee. He retired some 10 years ago.

George M. Eaton, F.R.I.B.A.

We regret to record the death at Derby of MR. GEORGE MORLEY EATON, F.R.I.B.A., He had been President of the Notts, Derby and Lincoln Architectural Association.

Born in 1889, Mr. Eaton was articled to Messrs. Bromley and Watkins, of Nottingham, and also studied at the A.A. and at Nottingham University. After the war, in which he served with the North Staffordshire Regiment and rose to the rank of Captain, he joined his father, the late Arthur Eaton, in the practice which the latter had established at Derby, and carried out a large amount of work in the neighbourhood, including the Central Electricity Station; housing schemes at Belper, Castle Donington and Kegworth; the Roman Catholic school; the electricity showrooms; cinemas at Babington-lane and London-road; and a number of factories, shops, public houses and residences. He won the competitions for the Carnegie Library and the Council Schools.

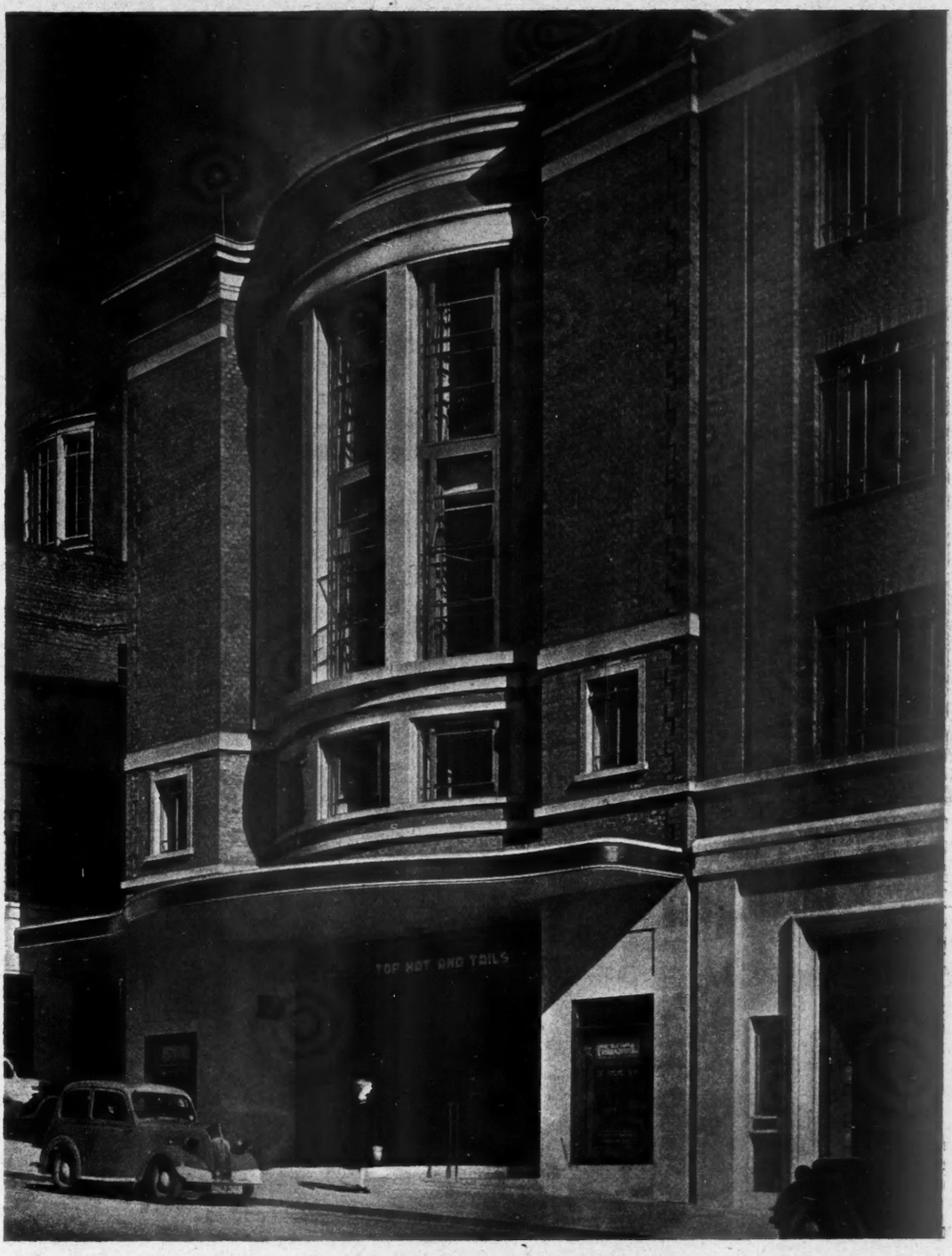
Mr. Eaton was surveyor to the Diocese of Derby, and had been responsible for the design of St. Edmund's Church and the restoration of the parish church at North Wingfield. The Christian Science Church, Friary-street, was among his last buildings; it is illustrated elsewhere in this issue. Mr. Eaton had also held the appointments of surveyor to the National Deposit Friendly Society, the Leek and Moorlands Building Society, the Hearts of Oak Benefit Society, and the Liversage Charity. Elected A.R.I.B.A. in 1920, he became Fellow six years later. He was also a Professional Associate of the Chartered Surveyors' Institution.

Paul Ogden, F.R.I.B.A.

MR. PAUL OGDEN, F.R.I.B.A., (retired), of Didsbury, Manchester, whose death at the age of 84 is reported, was an ex-President, trustee, and honorary secretary for 21 years of the Manchester Society of Architects, which, as Mr. C. Gustave Agate (President of the Society) has stated, was founded largely as a result of his efforts.

Mr. Ogden commenced practice in Manchester in 1879, after serving his articles with Whyat and Mellor. His practice, largely domestic, favoured the traditional Elizabethan and Tudor in style, but he also designed a good deal of ecclesiastical and commercial work, including alterations to the Greek Church, Higher Broughton; St. Paul's Parochial Rooms; Cottage Homes at Swinton; St. Jude's Schools; St. Michael's Educational Foundation; besides a number of hotels and factories in the Manchester area.

He held many appointments, and had been President of the Engineering and Architecture Sections of the Royal Sanitary Institute Congress in 1908. For ten years he was a member of the Advisory Committee of the Chair of Architecture, Manchester University, and for eight years a co-opted member of the Manchester Board of Education. He had been representative architect on the Manchester Air Pollution Advisory Board; Chairman of Housing Architects for the Corporation; and member of the Architects' Committee of the Manchester Diocesan Societies. Becoming A.R.I.B.A. in 1885, Mr. Ogden was elected Fellow seven years later, retiring in 1931. He had served on the R.I.B.A. Council.



THE ENTRANCE FROM NORTH STREET.

THE IMPERIAL THEATRE, NORTH STREET, BRIGHTON.

MR. S. BEVERLEY, F.R.I.B.A. (VERITY AND BEVERLEY), ARCHITECT.

THE ENTRANCE FOYER.

MR. S. BEVERLEY, F.R.I.B.A. (VERITY AND BEVERLEY), ARCHITECT.

THE IMPERIAL THEATRE, NORTH STREET, BRIGHTON.

THIS building has been erected for Southern Counties Theatres, Ltd., of which Mr. Ralph Lynn is the Chairman.

SITE.—The site upon which the theatre stands is one which conforms to a new building line in North-street, defined by the Corporation under an improvement scheme. The façade is a simple treatment of lofty windows over the entrance, forming a bay to the foyers on the upper floors. The general facing of the building is red brick with stone architraves and cornices.

PLAN.—The entrance vestibule leads into a large foyer decorated in tones of gold with one wall covered with mirrors.

The stalls floor is at street level, and from the foyer stairs give access upwards to the dress circle and upper circle (also to the boxes, which are eleven in number), and downwards to the bar foyer, this being a spacious room situated in the basement beneath the entrance foyer. The stalls have their own saloon and bar, situated beneath the stalls promenade. A similar spacious promenade is provided for the dress circle, which also has a large saloon with attendant foyers and offices. There is also a saloon provided, with a roomy foyer for the upper circle; thus each part of the theatre has adequate retiring spaces and interval promenades.

FURNISHINGS.—The fact that the theatre is in a marine locality is reflected in the decoration of the auditorium, where the carpet, fibrous plaster decorations and decorative painting to the proscenium, side walls and ceilings all embody some marine motif. This building is a legitimate theatre, with a stage 40 ft. in depth, and provision has also been made in the equipment for presenting motion pictures. The seating capacity of the theatre is 1,800.

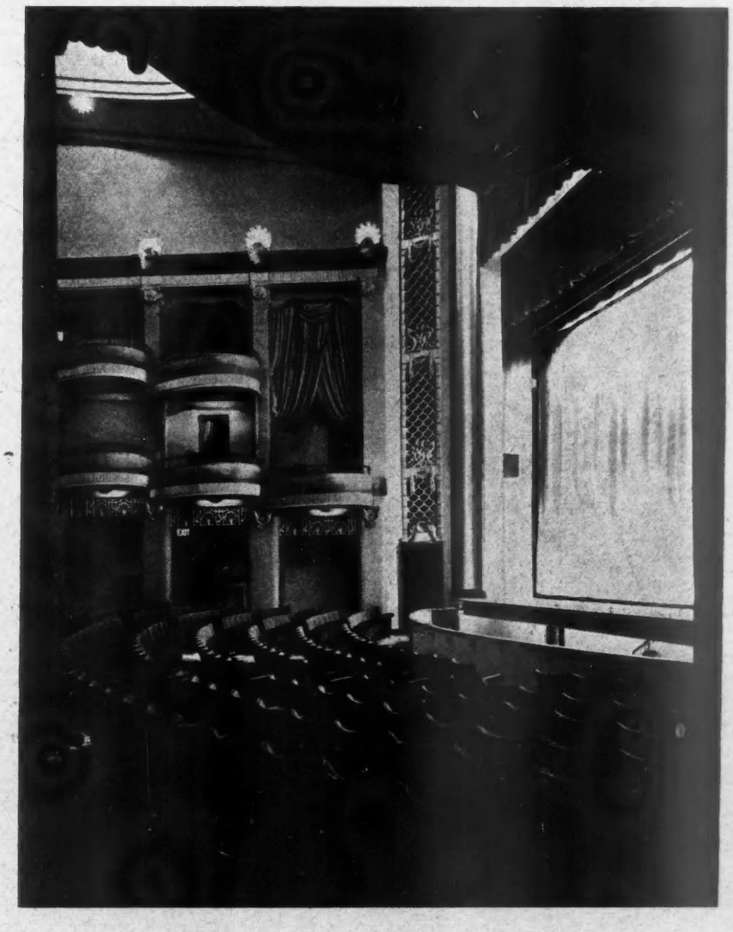
There are ample dressing-rooms and chorus rooms, together with quick-change rooms and other necessary offices, stage carpenters', electricians', musicians' and stage scenery rooms. The principal dressing rooms have bathrooms attached.

The stage is fully and adequately provided with the latest electrical switchgear, counter-weighting, etc., as is also the projection and spot-light room. Sound amplification also plays an important part.

The architect was Mr. S. Beverley, F.R.I.B.A., of Messrs. Frank Verity and S. Beverley, 32, Old Burlington-street, London, W.1. The consulting engineer for the constructional steelwork was Mr. S. W. Budd, M.Inst.C.E., and the quantity surveyor for the adjoining office block (also erected by the same company) was Mr. J. Pritchard Williams, F.S.I.

The general contractors were: Messrs. L. F. Richardson, Ltd., of Middleton-on-Sea, Bognor Regis. Sub-contractors and suppliers were: Steelwork, Moreland, Hayne and Co., Ltd.; heating and ventilating, Steel and Co., Ltd.; electrical work, Berkeley Electrical Engineering Co., Ltd.; metal windows, Crittall Manufacturing Co., Ltd.; cast stonework, Blokcrete Co., Ltd.; concrete and reinforcement, British Reinforced Concrete Co., Ltd.; safety curtain, screen, frame, and counter-weighting, Knight and Co. (Engineers), Ltd.; ornamental metalwork, Garton and Thorne, Ltd.; internal telephones, Dictograph Telephones, Ltd.; vacuum cleaning, Lamson Engineering Co.; hydrants and sprinklers, Hoffmann Sprinkler Co.; fibrous plaster, E. G. Payne, Ltd.; decorative painting, London Spray and Brush Painting Co.; tiling and terrazzo, Ramsdens, Ltd.; chairs and carpets, and curtains and stage draperies, H. Lazarus and Sons, Ltd.; projection and sound equipment, R.C.A. Photophone Co., Ltd.; electric light fittings, Best and Lloyd, Ltd.; and mirrors and decorative glass, London Sand Blast Decorative Glass Works, Ltd.

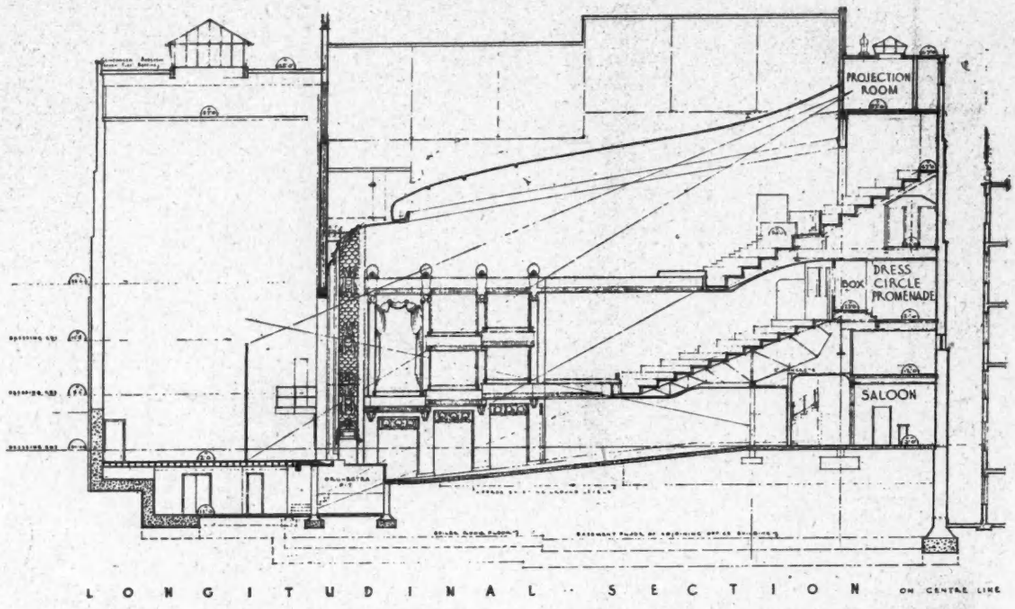
THE IMPERIAL THEATRE,
NORTH STREET,
BRIGHTON.



Above : THE AUDITORIUM : DETAIL OF BOXES.

Right : VIEW ACROSS AUDITORIUM.

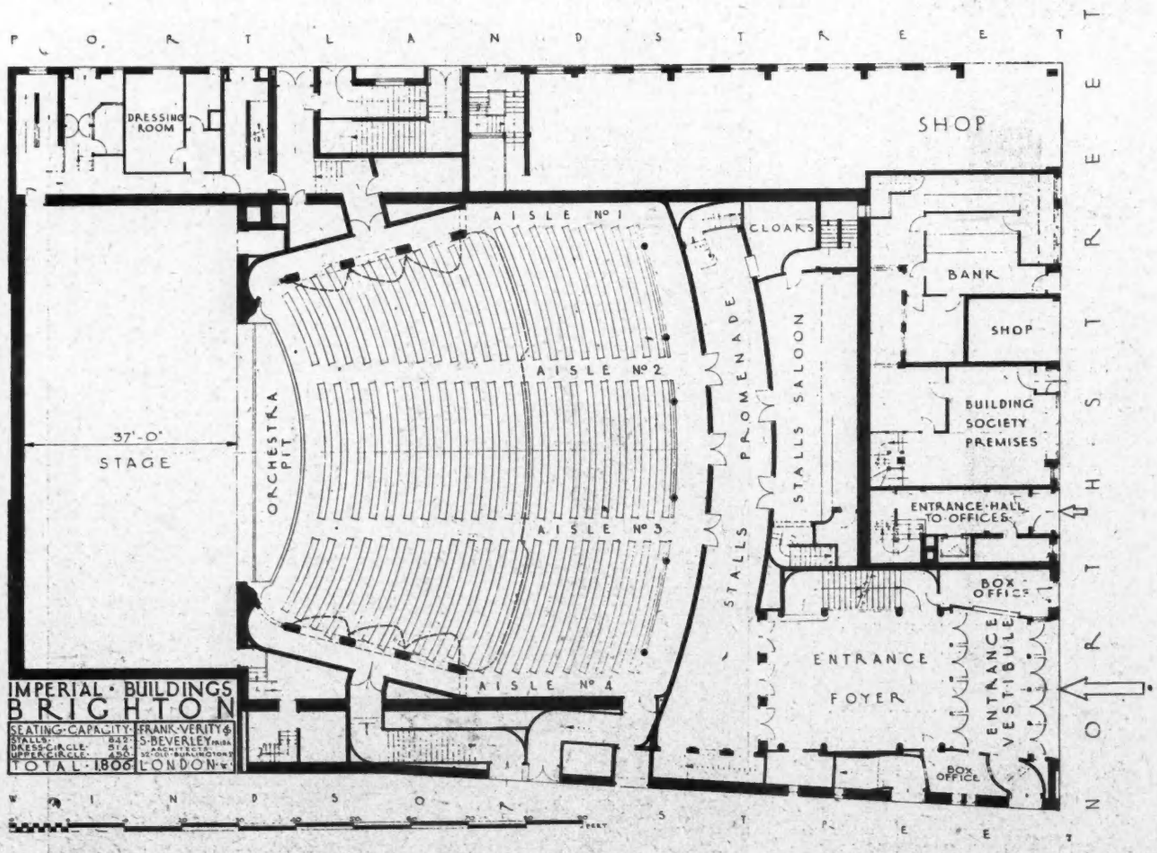
MR. S. BEVERLEY, F.R.I.B.A.
(VERITY & BEVERLEY),
ARCHITECT.



LONGITUDINAL SECTION ON CENTRE LINE

THE IMPERIAL THEATRE, NORTH STREET, BRIGHTON.

MR. S. BEVERLEY, F.R.I.B.A. (VERITY AND BEVERLEY), ARCHITECT.



"UPPER MEADOW": A HOUSE AT GERRARDS CROSS, BUCKS.

MR. W. NASEBY ADAMS, A.R.I.B.A., ARCHITECT.

THE ENTRANCE FRONT. *Below*: THE GARDEN FRONT.

THE SITE selected for the erection of this house, for Mr. and Mrs. Hugh R. Rudd, consists of about twelve acres of the Bulstrode Park Estate, Gerrards Cross. It is good meadow land with fine old trees and beautiful views. Prominently placed were two fine old oaks, and, after many exchanges of ideas between clients and architect, it was decided to strike an axis square to the line of these two trees and plan the house accordingly.

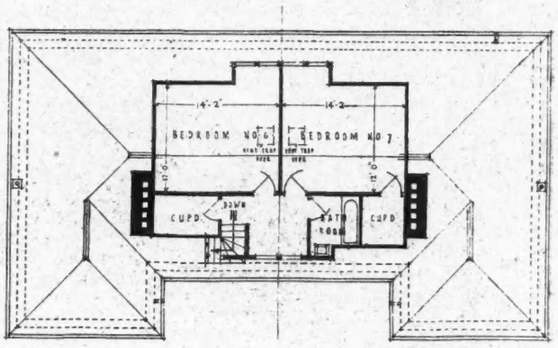
PLAN.—Agreement was very soon reached as to the style to be adopted, and the axial type of plan has resulted in a sound example of English domestic architecture.

MATERIALS.—The materials selected as most fitting to the local scene were Reading multi-coloured facing bricks and deep red-brown roofing tiles from Colliers, with sash windows painted white and frames showing. Doors are painted green.

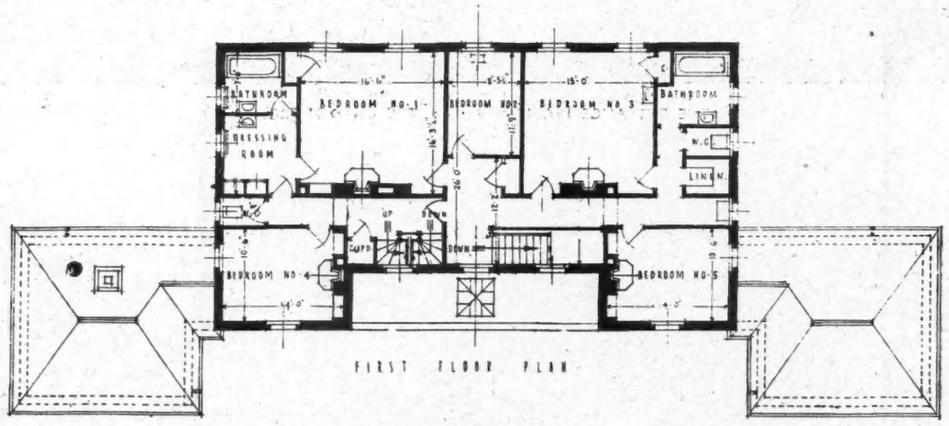
The main entrance is emphasised by an applied portico constructed of timber with a semi-circular fanlight, all carefully designed in accordance with the rules and measurements of the best period of eighteenth century work.

The double garage to the west is balanced by a similar wing to the east, thus expressing the original axis and giving scale to the main part of the house. Generally, the house fits happily into the landscape, and is already maturing well, as local and traditional methods of building were employed throughout.

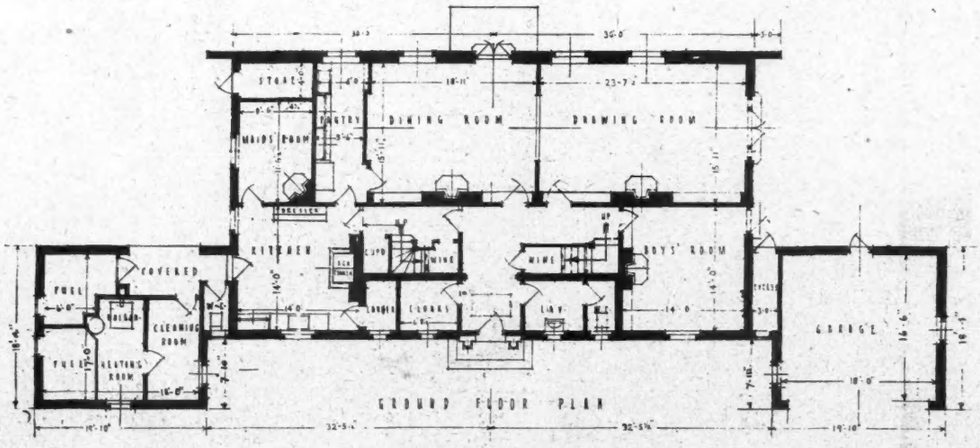
Mr. E. C. Desche, F.S.I., acted as quantity surveyor, and Messrs. J. W. Falkner & Sons were the builders.



SECOND FLOOR PLAN



FIRST FLOOR PLAN



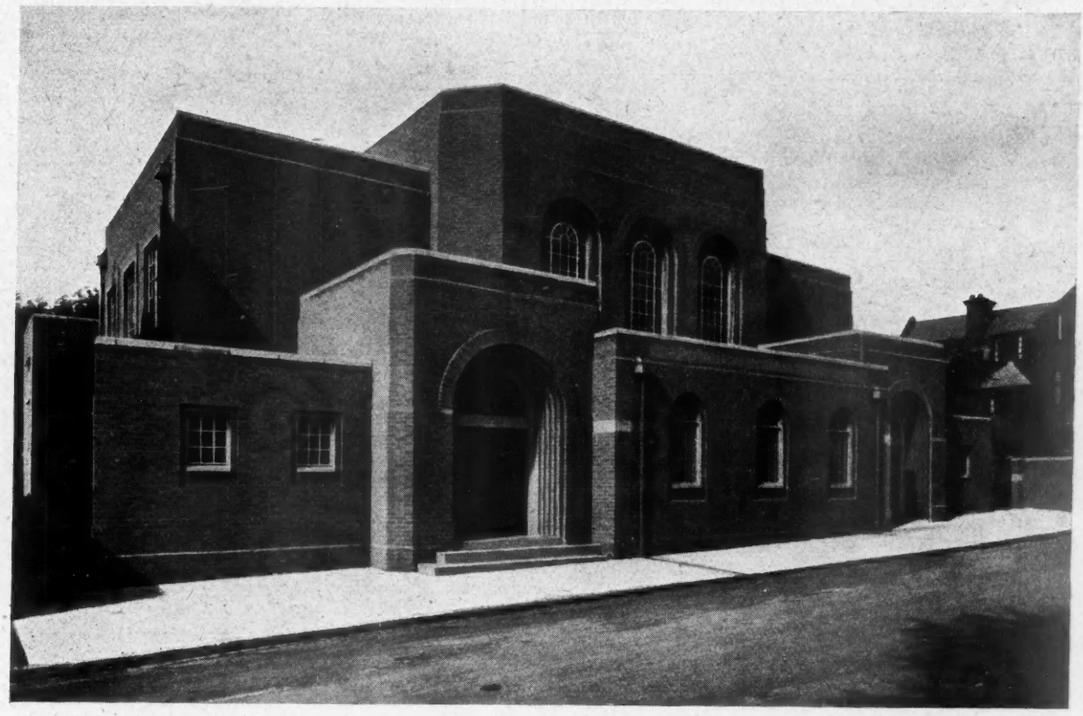
GROUND FLOOR PLAN

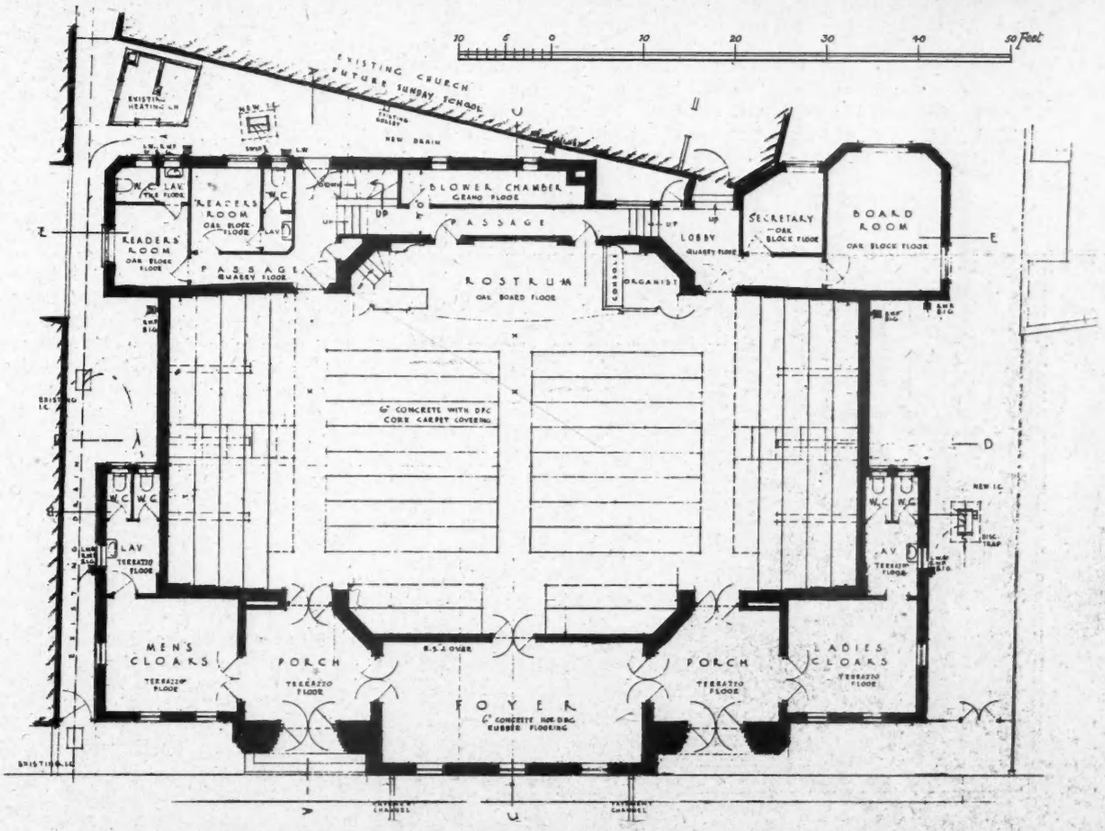
"UPPER MEADOW": A HOUSE AT GERRARDS CROSS, BUCKS.

MR. W. NASEBY ADAMS, A.R.I.B.A., ARCHITECT.

FIRST CHURCH OF CHRIST SCIENTIST, DERBY.

MESSRS. ARTHUR EATON AND SON, F.R.I.B.A., ARCHITECTS.





The plan of this church was determined by the form of worship, resulting in a definite arrangement of platform and seating and in the disposition of the principal rooms and approaches. Seating accommodation is provided for 400. The building has been designed in such a way as to grow up quite frankly and simply from the plan. The materials used externally are 2⅝ in. Bedford grey facing bricks. Reconstructed Portland stone has been sparingly introduced for copings, window surrounds, etc. Internally, unstained oak has been used throughout for the rostrum, doors, other internal finishings and pews. The church was one of the last works of the late Mr. George M. Eaton, whose death is reported elsewhere in this issue. Messrs. J. H. Fryer, Ltd., of Derby, were the builders. Other firms engaged are on page 487.

THE LONDON BUILDING ACTS.—II.

SETTLEMENT OF DISPUTES AND DIFFERENCES.

By W. T. CRESWELL, K.C., Hon. A.R.I.B.A., A.S.I., etc., and NORMAN P. GREIG, B.A., Barrister-at-Law.

ARBITRATION (*continued*).

THE Act of 1939 has provided for arbitration in several instances, though the methods employed differ. These differences will be apparent in discussing the three cases below.

Means of Escape in Case of Fire.—By Section 41 of the 1939 Act, where the occupier of a building claims to have sustained any damage directly and solely caused by the construction of any works carried on under Part V of the Act, the claim, unless otherwise agreed, must be referred to arbitration. If damage is established, the arbitrator must determine how it is to be borne by the persons interested in the building, and all the circumstances of the case must be taken into consideration, including the terms of any lease or contract affecting the building. The arbitrator will presumably follow the procedure laid down in the Arbitration Acts, 1889 to 1934, that is, the arbitration must be of the nature of a judicial inquiry, though it is noticeable that the Section does not refer to these Acts as does Section 107 (see below), which provides for arbitration in regard to the apportionment of expenses.

Dangerous Structures.—A special kind of so-called arbitration is provided by Section 63 of the 1939 Act in regard to this matter. But it is not an arbitration, for it merely involves the giving of a decision by the "third surveyor" when a dispute has arisen between the two surveyors appointed by the parties. True, the expression "award" is used, but there is no judicial inquiry mentioned or contemplated, and the "arbitration" is not arbitration under the Acts of 1889 to 1934.

Under Section 62 of the Act of 1939, when the district surveyor has completed his survey of an alleged dangerous structure (as to which see Section 61 of the Act), he must then certify his opinion of the state of the structure to the L.C.C. If the certificate is to the effect that the structure is not in a dangerous state, no further proceedings will be taken in regard to it. Should, however, the certificate be to the effect that the structure *is* in a dangerous state, the Council *may* shore up or otherwise secure the structure, and may erect hoardings or fences for the protection of passengers (*i.e.*, passers-by). But the Council must cause a written notice to be served on the *owner or occupier* requiring him forthwith to take down, repair or otherwise secure the structure. By Section 63, should the *owner* dispute the necessity of any requisition comprised in a notice, he can serve on the Council, within seven days of the receipt of the notice, a written requirement that the dispute be referred to arbitration. If he does so, he must at the same time give notice to the Council of the name of an independent surveyor appointed by him, to report jointly with the district surveyor on the condition of the structure.

Where such written requirement asking for arbitration has been served, then the independent surveyor and the district surveyor, before entering on a discussion of the dispute, must appoint a third surveyor, who is referred to as *the arbitrator*. Should there be disagreement between the two surveyors as to the appointment of the arbitrator, a Court of Summary Jurisdiction may, on the application of either of the surveyors, make the appointment. The independent surveyor and the district surveyor are to report jointly on the condition of the structure, within seven days after the service of the requirement as to arbitration.

Any question in relation to the dispute which cannot be agreed between the two surveyors must be referred to the arbitrator, who must make his award within fourteen days after the reference to him, and the notice served by the Council may be discharged, amended or confirmed, in accordance with the decision of the two surveyors, or on the award of the arbitrator, as the case may be. The costs of obtaining the decision of the two surveyors or (unless the arbitrator otherwise directs) the award of the arbitrator on the matter in dispute must be borne and paid by the Council, where the determination is adverse to the contention of the district surveyor. If the determination is adverse to the owner's contention, the costs of decision or award fall, of course, upon the owner.

It is provided by Section 64 that if the *owner or occupier* on whom notice has been served under Section 62 (see above) fails to comply with the original notice, or with the notice as amended or confirmed in accordance with the decision of the two surveyors or the award of the arbitrator, as speedily as the case permits, a Court of Summary Jurisdiction, on complaint by the Council, may order the owner to take down, repair or otherwise secure the structure, or such part as *appears to the Court* to be in a dangerous state. A time limit is fixed for the work, which must be to the satisfaction of the district surveyor. Should the requirements of the order not be complied with within the time stated in the order, the Council can do the necessary work (under Section 64), and if the structure, or any part of it, is taken down, they can remove the materials.

Where, however (Section 65), a structure is in such a dangerous state as to require immediate treatment, a Court of Summary Jurisdiction may, on complaint by the Council, make any order for remedying or taking down, etc., the structure. The Council may then take the steps open to them under Section 64 (see above). It should be noted that the Court can make the order, where immediate treatment is necessary, notwithstanding the owner's right to arbitration given by Section 63.

Immediate attention and action in respect to a dangerous structure notice must at once be taken by the parties upon whom it is served, even if the notice relates to a party structure.

(*To be continued.*)

THE HALL

FIRST CHURCH OF CHRIST SCIENTIST, DERBY.

MESSRS. ARTHUR EATON AND SON, F.R.I.B.A., ARCHITECTS. (See page 477.)

Plea for Minister of Housing.

SPEAKING at a conference of the Scottish National Housing and Town Planning Council in Edinburgh, Mr. Charles Grant, Housing Architect to Ayr County Council, stated that it was important that housing should be carried on to the fullest extent consistent with the circumstances obtaining during the war. He felt that what was required was a Ministry of Housing—a Ministry completely divorced from the Department of Health. Steps should be taken now to draw up a comprehensive report on the subject of housing, which would include all housing requirements for every class for the next 100 years, and incorporating the question of a closer relationship between it and planning and all social services.

TIMBERLESS FLOORS AND FLAT ROOFS

SURVEY OF CONTINENTAL MATERIALS AND METHODS OF CONSTRUCTION*

Introduction.

THE traditional floor and flat roof in this country is built of timber, but during the present century there has been an increasing use of a variety of types of floor and roof built of materials other than timber—steel, reinforced concrete, hollow tile—except in small domestic buildings. Immediately before the war the materials used in flooring were fairly sharply divided into two classes, timber for houses and the others for offices, flats, public buildings and the like.

In many countries, such as Switzerland, Austria, Italy, despite in some instances fairly plentiful supplies of timber, floors of the second type, which for convenience may be termed "incombustible" floors, have long been used even in housing, though not exclusively. In fact, in Zurich regulations forbid timber floors for kitchens and bathrooms.

There are already available in this country a number of well-known and very satisfactory types of "incombustible" floors which can be used with advantage to economise timber supplies. But these by no means cover all the designs which have been proposed. Some years ago a survey of Continental methods of floor construction was made by two officers of the Building Research Station, and that brought to light a number of methods which are unknown or relatively uncommon in this country. It is felt opportune to publish an account of them. Some are already available, and the publication of details of others should serve a useful purpose either by encouraging new developments in manufacture or by stimulating extemporisation by builders according to the circumstances prevailing. Details obtained from the literature of some corresponding American types of floor are also included in this note of those Continental floors.

With one exception the constructions which have been selected for description are those which involve the use of little or no shuttering, and the only timber required is for floorboarding and ceiling laths, which, however, may be replaced by one of several familiar alternative finishes. The dead weights given in the text include the weight of the particular type of ceiling and floor finish shown in the corresponding figure.

For economy in steel, as well as in timber, the use of pre-tensioned wire reinforcement as an alternative to the normal type of reinforcement shown in the diagrams might be considered.

Much might be said regarding the relative advantages and disadvantages of timber and other types of floors. One advantage of the non-timber floors that may be mentioned in relation to the present time is the better protection they afford against aerial attack by incendiary bombs. The "incombustible" floors described in this note will not only provide a better insurance against the fire effects of such bombs but also show a higher resistance to penetration of a light incendiary bomb than the plastered ceiling on joists which has been customarily used over the top floors of domestic buildings; the incombustible floors will, therefore, be particularly valuable in this position.

Methods of Construction.

The methods of floor construction to be described may be classified as follows:—

Type 1.—Floors† consisting of rolled steel joists (or pressed steel sections) and
(*a*) hollow, clay bridging blocks with or without flange covers; or
(*b*) concrete slabs cast *in situ* on some form of light permanent shuttering.

Type 2.—Floors consisting of pre-cast concrete ribs and hollow, clay blocks laid longitudinally.

Type 3.—Floors consisting of pre-fabricated, hollow tile beams with steel-and-concrete reinforcement.

Details of Types.

Type 1 (a)—Floors consisting of R.S.J.s or pressed steel sections and hollow, clay bridging blocks.

(a) The simplest example of this type is shown in cross-section in Fig. 1. The hollow

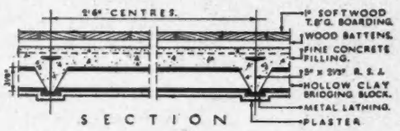


FIG. 1.

clay bridging blocks are laid transversely between the R.S.J.s and resting on their lower flanges. They are usually chamfered at their ends to an angle of about 70 deg. for convenience in erection. The spaces between the joists and above the tiles are filled with fine concrete. The flooring shown consists of t. and g. boarding on battens, but this may be replaced by other types of floor finish. A simple plaster ceiling is used. To facilitate plastering the lower flanges of the joists are covered with expanded metal or wire-netting, and in many types a number of dovetail grooves are formed on the under surface of the tiles for the same purpose. This floor weighs about 50 lb. per sq. ft.

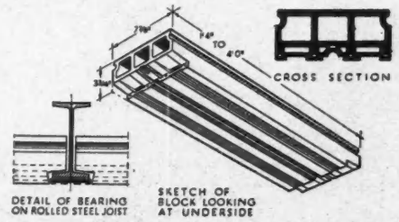


FIG. 2.

One disadvantage of this method of construction is that the soffit is necessarily uneven, and if a flat ceiling is required it is necessary to cut the ends of the tiles so that while resting on the lower flanges of the joists they will also be flush with their lower surface. This, however, may give rise to a pattern-stained ceiling and to avoid this a modification to the above has been developed.

(b) This modification is shown in Figs. 2 and 3. The tile is made so that its soffit projects below the joist and its end is shaped in the form of a dovetail to hold a small clay tile which is inserted beneath each joist. This gives a soffit of tile throughout. This type of floor weighs about 75 lb. per sq. ft.

(c) A further modification very common in certain parts of the Continent is to ensure an

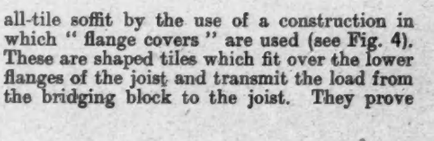


FIG. 3.

all-tile soffit by the use of a construction in which "flange covers" are used (see Fig. 4). These are shaped tiles which fit over the lower flanges of the joist and transmit the load from the bridging block to the joist. They prove particularly useful in the case of deep floors, where the filling material would otherwise be excessive. Fig. 5 shows a design in which the bridging blocks are supported by a ridge formed half-way up the flange-cover, and the ceiling slab consists of ribbed slabs obtained

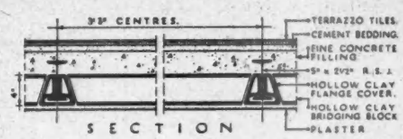


FIG. 4.

by splitting thin hollow tiles into two parts, and laying them rib downwards between the bottom flanges of the flange-covers. The ceiling is plastered direct on the underside. It will be noticed that the dimensions, parallel to the joists, of the various units forming this construction are arranged so as to reduce as far as possible the number of "straight" joints.

(d) A rather different style of construction is shown in Fig. 6. Here the special section R.S.J.s are designed to carry the dead load without assistance from the concrete. When the concrete filling between the hollow blocks

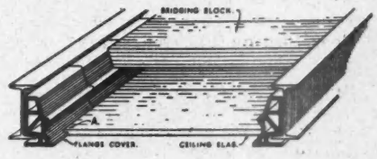


FIG. 5.

is placed, however, and the floor finished off, the R.S.J.s provide reinforcement for the concrete and enable the floor as a whole to carry the combined live and dead loads.

The same steel section is used for all spans, but for large spans additional reinforcement in the form of steel rods may be used. To provide further strength the concrete filling may be continued over the tops of the clay blocks, forming a series of T beams.

The blocks are laid lengthwise and are of one length only, variations in the length of the area to be covered being accommodated by increasing the bearing of the end blocks upon the wall or by replacing the end blocks with thin hollow slabs of special section.

For spans greater than about 10 ft. an intermediate temporary support is necessary to prevent undue deflection of the beams before concreting. This support cannot be provided from below as this would prevent

FIG. 6.

insertion of the blocks, which project below the soffit of the joists, and hence, a transverse reinforced concrete beam with top and bottom reinforcement is cast at the place where support is required. The shuttering for this is the only timber required. (This is known as the "Schild" floor.)

REMARKS.—On the Continent, hollow clay bridging blocks are usually of very fine quality and may be obtained in lengths varying from 16 to 48 in. The usual spacing of joists, however, is of the order of 30 in. Flange-covers are made in five sizes to cover joists ranging in depth from 3 in. to 15 in.

Modified forms of tile and flange-cover are available for use with light, welded steel joists of the type shown in Fig. 7. The

* Notes from the Information Bureau of the Building Research Station. Crown Copyright Reserved.

† The term "floor" is used throughout in the interest of brevity, for floors, flat roofs and top-floor ceilings, since the designs described are applicable, with suitable modifications as to finish, etc., for all these purposes.

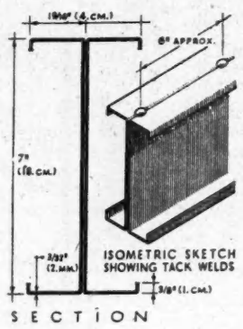


FIG. 7.

joists are of German origin and made in various standard depths. The sheet thickness, flange width, etc., are the same for all depths. The two channel sections are tack-welded at 6-in. centres staggered top and bottom. The curves shown in Fig. 8 show the weights of

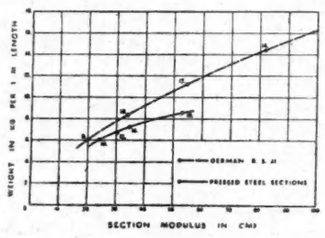


FIG. 8.

German R.S.J.s and pressed steel sections for varying values of section modulus. It will be seen that the saving in weight increases with the depth of the section. For the methods of construction discussed here a typical floor of 13-ft. span with joists at 2 ft. 7½ in. centres and under a live load of 40 lb. per sq. ft. would require rolled joists 4.8 in. deep (weighing 7.5 lb. per ft.) or pressed sections 7.1 in. deep (weighing 5.7 lb. per ft.). The saving in weight is thus of the order of 25 per cent., which becomes an appreciable factor when it is important to conserve supplies of steel.

Type 1 (*b*)—*Floors consisting of R.S.J.s or pressed steel sections and concrete slabs cast* in situ *on light, permanent shuttering.*

(a) A popular system of this type is shown in Figs. 9 and 10. The hollow, clay bridging

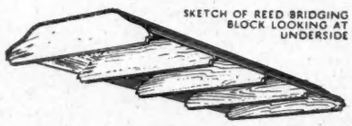


FIG. 9.

block used in the previous example is replaced by a mat of dried reeds supported in the required form by shaped wooden boards spaced at about 12-in. centres. The length of the unit varies between 3 ft. and 6 ft., depending on the length of reeds available. The floor weighs about 45 lb. per sq. ft.

Various alternatives to reeds should be possible, such as brushwood, or fibre board. The only property desirable in such cases is that the material should be sufficiently durable to form a light and permanent shuttering for the concrete slab cast *in situ*.

As will be seen in Fig. 10, stirrups are welded to the upper flanges of the R.S.J.s and carry reinforcing bars which ensure that the steel and concrete work together. For a span of 12 ft. the joists are 5 in. by 2½ in. at 27-in. centres, whilst the depth of concrete above the joists is 2 in.

(b) Another method in which concrete slabs are cast *in situ* on permanent shuttering is found in American practice. This employs lightweight pressed steel sections (known as "metal lumber joists") similar to those previously described. These are placed 18 in. to 30 in. apart and supported transversely at intervals of not more than 6 ft. by a bracing of crossed wires or by horizontal tie rods. A ribbed-mesh type of reinforcement is used and this is merely laid on the joists over the area to be covered and the concrete slab (2 in. minimum thickness) poured over it. The mesh of the material is sufficiently small to hold the concrete and the ribs are stiff enough to prevent excessive sagging, the whole form-

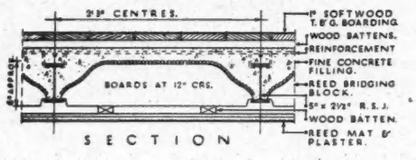


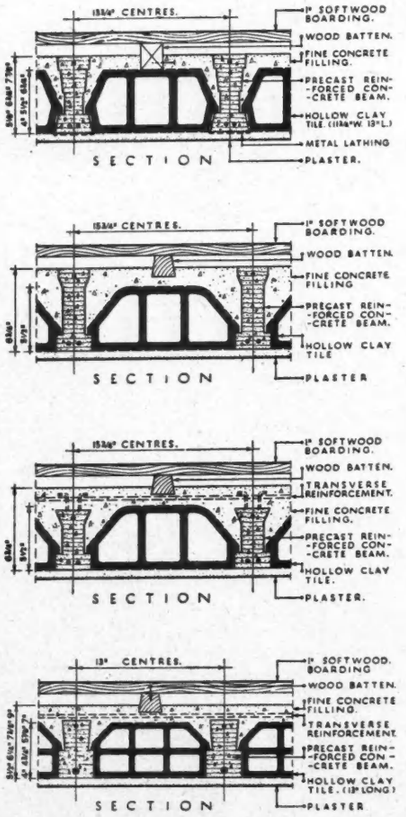
FIG. 10.

ing a convenient combination of reinforcement and centering. There is sufficient grip between concrete and reinforcement to develop the bond-stress required.

Type 2—*Floors consisting of pre-cast concrete ribs and hollow clay blocks.*

In floors of this type the ribs are spaced fairly closely and the blocks are laid longitudinally and are much shorter than the usual type of bridging block. In Continental practice, the manufacturer casts the beams specially for each job, though beams of various sizes are usually carried in stock.

(a) The first example of this type of floor is shown in Fig. 11. The method of construction requires no explanation. Three depths of rib are shown : these are for spans up to 13 ft., 16 ft. 3 in. and 37 ft. 6 in in order of increasing depth. In each case the



FIGS. 11-14.

tiles are approximately 1⅛ in. shallower than the beam and have a length of 13 in. (This is known as the "Norma" floor and weighs 51 lb. per sq. ft.).

(b) Two forms of a similar type of floor are shown in Figs. 12 and 13. Under test, a slab of the first form, 13 ft. 9 in. long and 6 ft. 6 in. wide, failed by steel yield at a load of 6.3 times the working load. (This is the "Schleutermann" type of construction, weighing about 58 lb. per sq. ft.).

(c) Fig. 14 shows a third example in which transverse reinforcement is used to distribute the load. Table 1 shows the relationship between depths of tile, beam and floor.

TABLE I.

Tile depth. in.	Beam depth. in.	Floor depth. in.
4	5⅛	5½
4¾	5⅛	6¼
5⅞	5⅞	7⅜
7	5⅞	9

Data showing the relation between span and dimensions of floor are not available, but it is known that a span of 13 ft. requires a 4-in. tile. (This "Ottiker" floor weighs about 45 lb. per sq. ft.)

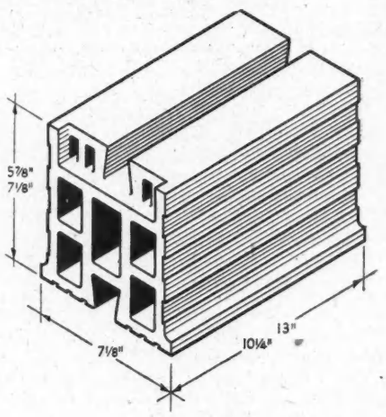


FIG. 15.

Type 3.—*Floors consisting of Pre-fabricated, Hollow-tile Beams with Steel and Concrete Reinforcement.*

Methods of floor construction using precast hollow reinforced concrete beams laid side by side are well known in this country. With this system it is necessary either to cast the beams specially for each job or the manufacturers must carry very large stocks to meet varying requirements. There is, however, a method used on the Continent which, it is believed, has so far not received much consideration in Britain, though a modification of it has met with a certain amount of success in parts of the United States of America.

The constructional basis of this method is the manufacture, on the site, of beams consisting of hollow clay blocks laid end to end. Special sections are used and these are shaped to accommodate reinforcement in both tension and compression zones. A lower flange on each block maintains a gap between adjacent beams which is later filled with concrete and serves to key the floor together, besides affording space for additional reinforcement should this be required. Beams to suit any span may thus be built up. Each beam is capable of carrying its own weight when simply supported at the ends, but should not be called upon to carry live load until the

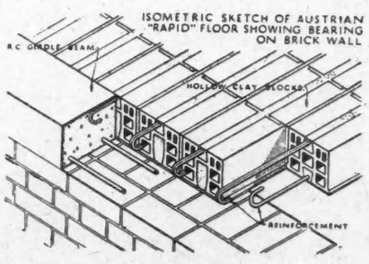


FIG. 16.

spaces between adjacent beams have been filled with mortar and this has set. A thin layer of mortar is used to cover the beams to protect them from damage during building

operations, but is not assumed to relieve the blocks of stress when under load.

Following are some details of three Continental types and an American modification :—

(*a*) The first of these types is shown in Figs. 15, 16 and 17. In this case no reinforcement is shown between beams, but may, of course, be added if required. The method of assembly is as follows :—

The blocks are wetted and laid end to end on a board. The upper reinforcement is placed in the groove and mortared, and the gap in the compression zone filled up with mortar. The beam is then turned over and the same is done with the tensile bar. (A special clamp has been devised to keep the blocks in alignment and facilitate turning over; details of this are not available.) The clamps are then removed and the mortar

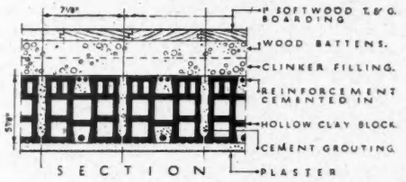


FIG. 17.

allowed to set. This requires about ten days for rapid hardening cement and about twenty-eight days for ordinary Portland cement.

A horizontal, lightly reinforced concrete girdle beam is provided, and the compressive reinforcement is carried beyond the ends of the beams and hooked into this frame. The tensile reinforcement finishes at the ends of the beams; nevertheless, sufficient anchorage is obtained here by knocking out the short horizontal rib, thus deepening the centre groove and hooking the end of the bar. The torsional and other resistance of the girdle is sufficient partly to fix the end of the beam, and a maximum bending moment in the beam of $\frac{ml^2}{12}$ is usually assumed.

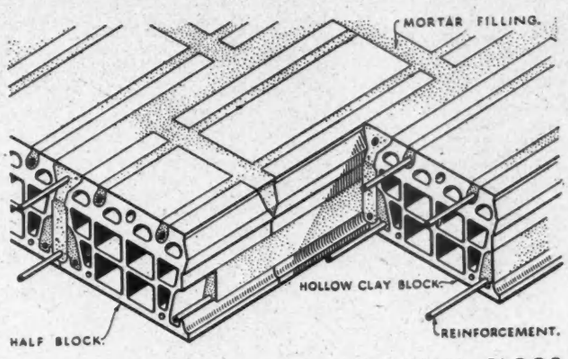
This type of floor carries light partitions without further support, and their weight is assumed to be distributed and added to the dead weight of the floor itself.

Openings for fireplaces and staircases are made by casting reinforced concrete trimmers *in situ*. These are tied to the trimming beams by breaking away the tiles of the latter for a short space and bedding the reinforcement into the tile. Temporary support and a certain amount of shuttering are, of course, required for this operation.

Tests have shown that the beams may be made continuous over two or more spans despite the reversal of bending moment and the absence of compression-transmitting areas of mortar on their undersides.

Four labourers can make about 50 sq. yds. of beam in eight hours. (This is known as the "Rapid" system, and has a dead weight of 64 lb. per sq. ft. The production of this floor has been started by a British firm, and tests have been made at the Building Research Station of a floor section constructed by them.)

(*b*) A similar type of construction is shown in Figs. 18, 19 and 20. The dotted lines in Fig. 18 represent webs which support the lower flange during transport and are broken away immediately before use. The method of fabrication of a beam is similar to that described under (*a*) above, with the exception



ISOMETRIC SKETCH OF "ADAMOLI" FLOOR

FIG. 19.

that the beam does not require turning over in order to insert the tensile reinforcement. Compression is tranmitted from tile to tile through the mortar which fills the gap provided by the chamfering of the upper corners of each block. The spaces between beams allow the placing of shear reinforcement, and also, at points where there is reversed bending moment, of tensile reinforcement.

Normal lengths of tile are 11¾ in. and 15¾ in., but odd lengths can be made up with

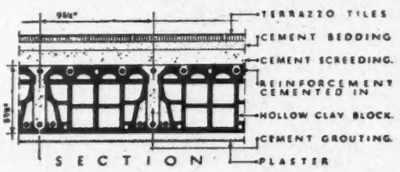


FIG. 20.

special tiles 8 in. and 10 in. long. As in the previous example, there is sufficient bond between beams and walls partially to fix the ends of the former. The floor is designed as a solid slab spanning in one direction only. It will be noticed that a staggered system of jointing is used.

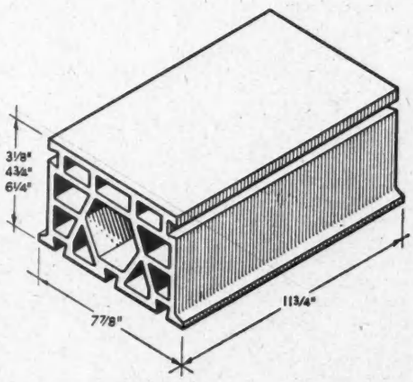


FIG. 21.

High-tensile steel bars with an ultimate strength of 47 tons per sq. in. and a working stress of 15.25 tons per sq. in. are advocated for use in these floors. Rapid-hardening Portland cement with a mortar strength of 9,250 lb. per sq. in. compression at twenty-eight days is used, and the working stress of a 1 : 4 mix is of the order of 925 lb. per sq. in. (This is the "Adamoli" construction.)

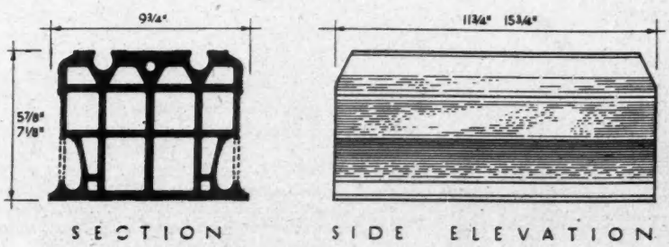


FIG. 18.

(*c*) A third example of this type of floor is shown in Figs. 21, 22 and 23. This has disadvantages due to the absence of mortar compression areas between tiles, with the result that a single beam has considerable deflection under the weight of one person. Props at intervals of 6 ft. of span are used to counteract this, and when the mortar is finally placed between beams and allowed to set, tests show that the floor is satisfactory.

The method of fabrication is as follows :—

Two of the blocks are laid end to end upside down on a board which is depressed at the centre to give a ¼-in. camber in the finished beam. Two ⅜-in. dia. steel bars are placed in the side grooves, one on each side of the block, and are tied together with thin wire. Further blocks are then fitted between the bars, which are wired together after every third block. The tensile reinforcement is then mortared into position and a thin, uniform layer of fine sand spread over the blocks preparatory to the placing of blocks for a second beam. In this way the beams are made up one above the other to a convenient height. The side grooves are then filled with mortar and this is allowed to set for fifteen days. Two men then carry the beams and place them in position, and when the whole floor is ready the gaps between beams are filled with liquid mortar.

A certain number of additional bars are used to resist reversed bending moment at the ends which results from the embedding of the main reinforcement in a concrete girdle beam over the wall. (Flat roofs, however, are designed for a maximum bending moment of $\frac{wl^2}{8}$.)

The main blocks are 11¾ in. long. The splayed end-blocks are made 5⅞ in. and 11¾ in. long, and these are used in alternate beams so as to stagger the joints. The small size of groove requires small sizes of bar, and these are always of high-tensile steel (ultimate strength 74 tons per sq. in.). The rapid-hardening Portland cement mortar (1 : 2 mix) has a crushing strength of 5,000 lb. per sq. in. at fifteen days.

It has been shown that the strength of these floors may be estimated by taking the net compression area into account and using a modular ratio of 10. (This is the S.A.P. floor, weighing about 42 lb. per sq. ft.)

(*d*) In certain parts of the United States of America a modification of this method of construction has been used. The tile beams are of inverted T section with a hollow web. (A similar section used in aircraft construction in Britain is called a "top-hat" section.) The beams are not close set as in the other tile beam constructions described above, but are spaced so as to carry hollow-tile bridging blocks resting on their flanges.

The beams are fabricated by buttering the ends of the tiles and laying them end to end on a board to the required length. Steel bar reinforcement is then laid in the channels of both flanges and mortared into position. Vertical shear reinforcement is also used where necessary. The beams are sprinkled with water daily and when sufficiently strong are hoisted into position. The hollow clay bridging blocks are about 1 ft. wide by 4 in. or 6 in deep by 1 ft. to 2 ft. 6 in. long. They are buttered together with mortar and laid

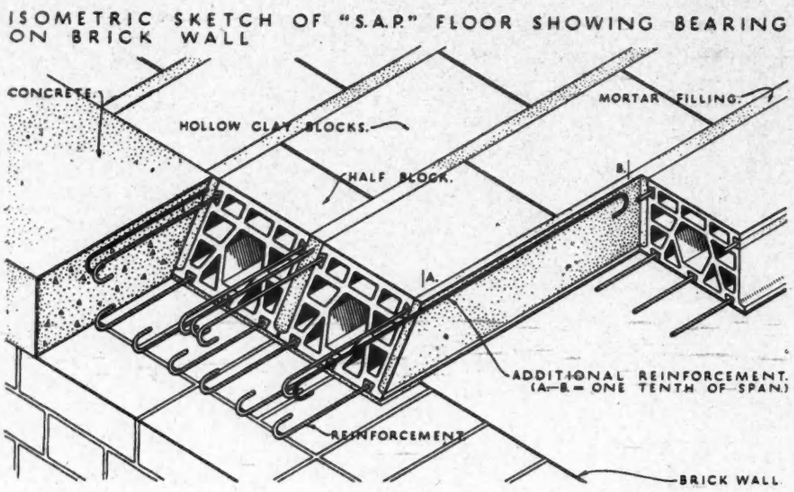


FIG. 22.

transversely between the beams on mortar beds. This method does not give a flat ceiling, but a flat ceiling is provided if required by using blocks laid lengthwise with the beams and rebated so that their under surface is flush with the bottom of the beam. Steel reinforcing bars are placed over the beams wherever reversed bending moments occur, and the floor is then covered with a 2-in. or 2½-in. layer of concrete lightly reinforced to prevent thermal and shrinkage cracks. The whole floor is sprinkled with water daily and will carry its working load about fourteen days after laying the concrete. This type of floor weighs about 43 lb. per sq. ft. and is suitable for spans of 10 ft. to 16 ft.

Cost.

It is difficult to assess the cost in this country of these types of floor, as it is not known at what price the various kinds of tile could be produced. As a guide, however, it may be assumed that the ratio of the cost per sq. yard of any one type of floor to the

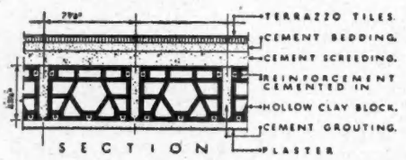


FIG. 23.

labourer's hourly wage is very approximately constant from country to country, and hence provides an index figure showing the relative cost of different types of floor. In Table II are given values of this index for the Continental floors described. The indices given were calculated before the war on the basis of information obtained in the course of the survey already mentioned and relate to floors of 13-ft. span.

It should also be borne in mind that these values are based on the cost of materials, particularly tiles, as produced abroad, and may need modification for this country.

Design.

The types of floor construction described above are, in general, not new; they are standard practice in many countries. No attempt is made in this note to give figures for design purposes, as these will depend, among other things, on the strength of the tiles used, and since most of them are not manufactured in this country no information thereon is available. Where the illustrations give dimensions and spacings of beams, etc., it may be taken that these are for the usual domestic loading of 40 lb. per sq. ft., the lighter sections being for a span of 13 ft., when using Continental-made tiles.

Proprietary Rights.

Many of the floors described are of a proprietary character, and any firms proposing to adopt the designs should take steps to ensure that they are not infringing patent rights.

Building in War Time.

A series of sheets has been published by the Cement and Concrete Association with the object of assisting architects, engineers and surveyors to design and carry out building and certain special types of work under war conditions. Eight in all, these sheets (which are printed on stout paper and illustrated as necessary with diagrams) suggest methods and materials which will reduce or obviate entirely the use of timber and other building materials which are difficult to obtain or have to be imported. Copies are obtainable from 52, Grosvenor-gardens, S.W.1.

TABLE II.

Type.	1 (*a*).				1 (*b*).
Description ...	Clay Filler Block (A)	(B)	(C)	"Schild" (D)	Reed Bridging Block (A)
Index figure ...	11.6	15.8	20.0	12.0	10.8

Type.	2.			3.		
Description...	"Norma" (A)	"Schleutermann" (B)	"Ottiker" (C)	Austrian Rapid (A)	"Adamoli" (B)	"S.A.P." (C)
Index figure	10.5	11.4	12.2	15.6	15.5	15.0

EMERGENCY INQUIRY BUREAU

Questions from readers arising out of War-time difficulties and recent Emergency legislation will be answered by a special staff of contributors. Questions, which should be addressed to the Editor, should be accompanied by a stamped and addressed envelope.

Re Increase in Wages.

SIR,—*In December last we tendered and secured a painting contract of two thousand pounds, under a London borough. During the past few weeks wages have increased by one penny, and may, owing to the present conditions, increase far more in the near future. We feel that we are entitled to claim from the Council any increase in wages which may occur during the execution of this contract, as we tendered on the basis of rates of wages at that time. We shall be grateful for your view.* CROHAM.

A correspondent writes: As this contract was tendered for, and entered into, since war was declared, it must be taken that the inquirer must have known what was likely to occur in respect to increases in wages; and the contract was entered into well knowing all this. If, as appears, there are no terms of the contract providing for an increase in wages, or a corresponding decrease, should either occur, and as all contracts should now contain such, then the inquirer cannot legally sustain a claim for the increase, though he might be given it as an act of grace.

IN PARLIAMENT

Architects and the Building Industry.

MR. E. WILLIAMS asked the Minister of Health whether he had considered the memorandum of the Incorporated Association of Architects and Surveyors, setting forth the present difficulties of the professions of architecture and surveying, and what steps he proposed to implement the three suggestions contained in that memorandum.

MR. ELLIOT said that the reply to the first part of the question was in the affirmative. As regarded the second part he shared the desire of the Association that the building schemes of local authorities should proceed as soon as circumstances permitted and he was keeping the position under constant review.

Camps.

In reply to MR. MANDER, MR. ELLIOT said that of the 31 camps built by the National Camps Corporation, six were now occupied and nine more would be occupied before the end of the month. The question whether further camps should be built, and, if so, on what lines, would come under review in due course.

Building Restrictions.

MR. MARTIN asked the Minister of Health whether, in view of the serious deterioration in much of the poorer kind of residential property in certain parts of London, he would now relax the restrictions imposed on local authorities for building during the war.

MR. ELLIOT said he regretted that owing to the demand on materials for other purposes he was not in a position to adopt the suggestion made. He was most anxious that the building schemes of local authorities should proceed as soon as circumstances permitted.

Requisitioned Buildings.

MR. MABANE, on behalf of the First Commissioner of Works, stated that of the 1,131 buildings requisitioned by the Office of Works 204 were hotels. The total annual rateable value of these hotels was about £121,500. Apart from these 204 hotels now held by the Department 23 hotels were previously requisitioned but had since been handed back. In 15 of the latter cases claims had been made for compensation. The total amount so far claimed was by way of rental compensation was £32,790 a year, and sums amounting to £11,420 on other grounds.

GLASS AND CONCRETE CONSTRUCTIONS

MUNICH, 1938, foreshadowed many developments, not the least of which were new requirements or new types of constructions in the building trade. One such development has been in the direction of reinforced concrete and glass constructions which would prove satisfactory under air-raid conditions. When subjected to high-explosive and other types of bombs, it was clear that such constructions, to be satisfactory, would have to withstand exceptional stresses, and it was on these lines the question was investigated.

As a basis, it was assumed that to improvise new constructions on theoretical assumptions could not be satisfactory, and it was therefore decided that modifications to standard constructions which had stood the test of time would be preferable. In the main, these revisions called for either specially toughened lenses of standard section to withstand splintering, or variation in the strength of the construction as a whole, to withstand abnormal loading.

In their investigations, Messrs. J. A. King & Co. have rarely found it necessary to evolve a new construction to serve the most exigent needs, so that even under war-time conditions it is still a commercial, and therefore an economical, proposition to install these constructions.

The Type 88 window (shown in Figs. 1 and 1a) is designed to resist both splintering and blast by using either single or double thickness constructions. Under test, the single construction is claimed effectively to withstand the blast of a 500-lb. bomb at 50 ft. Even greater protection is obtained with double construction. Extensive works in this have been carried out at numerous depots under the jurisdiction of the Air Ministry.

For grid windows the Type 600 is recommended. This (see Figs. 2 and 2a) comprises a concrete frame adequately reinforced at 18-in. centres. The ribs are rebated to receive glazing with any glass up to ⅜ in. thickness. Under A.R.P. schemes ¼-in. "Armourplate" should be used, or, at the very least, a wired glass. For ventilation, opening sashes can be incorporated.

For large areas of windows where projecting concrete ribs are not suitable, the double-glazed patent construction Type 1212 merits every consideration, as the design is such that it will carry its own thickness of brickwork. For protection purposes the glass should be as mentioned for the Type 600. This construction (shown in Figs. 3 and 3a) can be built up in precast units or cast *in situ*. Precast 9-in. × 9-in. r.c. and glass units can be supplied where it is required to substitute glazing for brickwork.

Messrs. J. A. King have also investigated the question of roof lights and the types of lens that are most suitable for resisting incendiary bombs and splinters. Here the design is such that direct focusing is eliminated and maximum diffusion of light provided (see Fig. 4).

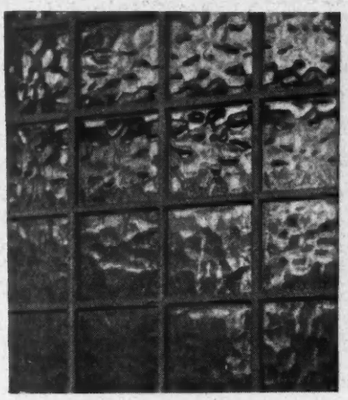


FIG. 1.

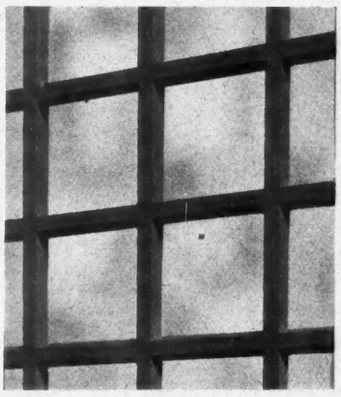


FIG. 2.

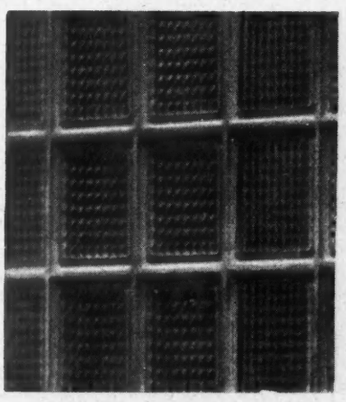


FIG. 3.

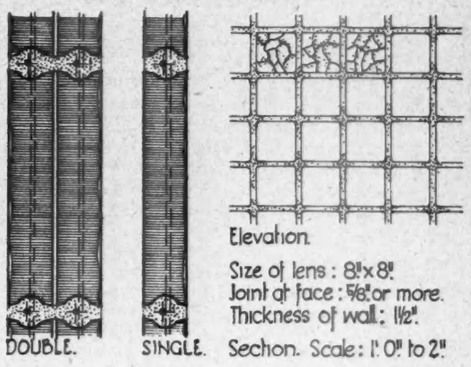
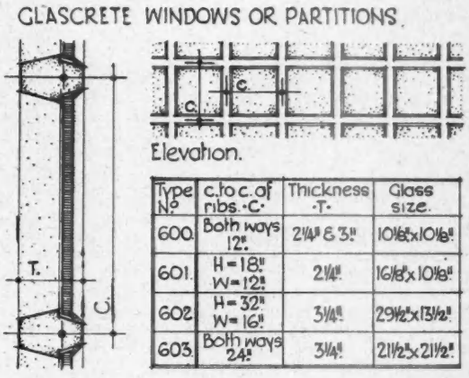


FIG. 1a.



Type No.	c. to c. of ribs. C.	Thickness T.	Glass size.
600.	Both ways 12".	2¼" & 3".	10⅛"x10⅛"
601.	H = 18". W = 12".	2¼".	16⅛"x10⅛"
602.	H = 32". W = 16".	3¼".	29½"x13½"
603.	Both ways 24".	3¼".	21½"x21½"

FIG. 2a.

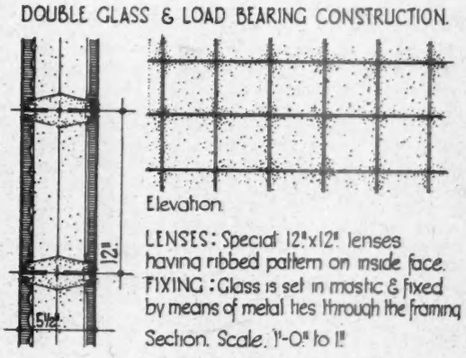

DOUBLE GLASS & LOAD BEARING CONSTRUCTION.
12"
1½"
Elevation
LENSES: Special 12"x12" lenses having ribbed pattern on inside face.
FIXING: Glass is set in mastic & fixed by means of metal ties through the framing
Section. Scale. 1'-0" to 1"

FIG. 3a.

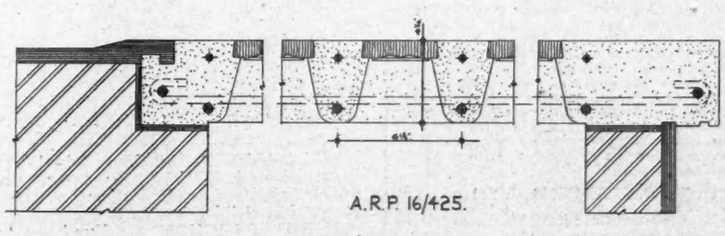


FIG. 4.

The glass, though not exceeding 1 in. in thickness, is fully strong enough to meet its purpose; it is interesting to note that such glass of uniform thickness is not so liable to fracture when fixed as the older type of 3-in. and 4-in. lens. The glasses used are, of course, toughened. If lights are of an easily handled size and weight, and if it is economical to do so, they are precast; otherwise all types of "Glas-crete" roof and pavement light are made *in situ* with special forms which permit small adjustments to be made to overall sizes to work in with adjoining construction. Lights are designed to carry up to 400 lb. per sq. ft. for demolition loading.

TIMBER TRADE FEDERATION

A LUNCHEON.

THE statement that "we are long past the idea of using timber for building purposes in that it is being conserved for essential war services" was made by MR. LESLIE BURGIN, M.P. (Minister of Supply), in a speech made at a luncheon held by the Timber Trade Federation of the United Kingdom, at Grosvenor House, W., on Friday last.

MR. BURGIN (who was replying to the President, MR. LEONARD ARNOTT) said that according to the toast he stood before them as the Minister of Supply, but, according to the words of one of the trade journals, as the greatest danger that had faced the trade since the world began! He would like to put the case as he saw it. Timber was essentially a raw material and a war material; there was hardly an industry that did not require some quantity of timber. It was in short supply, due solely to the competition for shipping space, and though many members of the trade had been hit sorely—for war pressed extraordinarily unevenly—he would like to thank them for the manner in which they had received—welcomed would not be the right word—the Draconian orders that had been issued by his Ministry. The essential of the moment out of the three forms of timber imported—pit props, pulp and all other forms of sawn timber—was pit props, for in this war coal was a commodity which had almost the value of gold. Unless pit props could be produced in sufficiency in this country, all available shipping resources would have to be devoted to that use. "We shall import every standard of timber possible," declared the Minister. "That is the fixed intention of the Government, but the competition for supplies in war-time is evident." He was asking the whole country to reduce its demands for timber to a minimum so that imports could be minimised.

In this country we had a good deal of home-grown timber, and he advised the timber trade to look in that direction and also to consider making use to a greater extent of hardwoods, of which there happened to be a greater supply. That the timber trades had had their business interfered with seriously he was well aware, but he knew of no way in which it could have been prevented. He was glad to know that the Federation was arranging a system to pool incomes, so that those whose trade had been cut off would share in the profits of those whose work had been doubled or trebled. The moment would soon arise when the stocks bought by the Controller would be distributed on a quota system. When the moment arrived it would be the Minister's duty to see that the benefit accrued to the Chancellor of the Exchequer, but he could say that the method of distribution would be equitable, and in war time no one could ask for more.

The PRESIDENT, in proposing the toast, referred to those happier times, when timber was a building material and not a semi-precious material; when lino was just the cheapest form of floor covering and not a substitute for timber; and when the timber trade was run by timber men and not by what might be called *ersatz* Civil Servants! To-day the trade was worried as to the present and anxious as to its future. They agreed that all efforts must be subordinated to the war, but claimed that there was a great deal of work that the trade could do which was being done by the Timber Controls—with saving to the national exchequer and benefit to the individual traders. They were asking for work which they were equipped to do, which would also enable them to fit themselves to carry on immediately the war was over.

In response to the toast of "The President" (proposed by MR. J. L. BAYNES), MR. ARNOTT said that the Minister had just handed him a slip of paper containing the message: "If I can use to a greater extent the timber trade and its organisation, I shall be happy to do so."

The company included: Col. J. J. Llewellin (Parliamentary Secretary, Ministry of Supply), Major A. I. Harris (Controller of Timber Supplies), Sir William J. Mallinson, Sir Roy Robinson, Mr. W. O. Woodward, Ald. H. Williams, Lord Dunmore (President, T.D.A.), Col Stuart Mallinson, Major A. P. Bamberger Woodburn, Messrs. Hubert Elliott, A. D. Macfarlane, T. M. Duncan, E. J. Gadsden, A. G. Beckett, E. E. House, T. J. Hughes, Herbert E. Newsum, R. D. Roe, E. P. Tetsall, Harold Lees, A. E. Belmont, H. T. Hallam, C. W. Anderson, E. H. B. Boulton, Stanley Gliksten, M. J. Gleeson, E. C. Horton, B. Hughes, F.R.I.B.A., R. Jewson, A. M. McVey, and F. W. Vigers.

OFFICIAL NOTIFICATIONS

Concrete Pit Props.

The Mines Department has issued a specification for reinforced concrete pit props. Before the outbreak of war nearly 2½ million tons of timber pit props were imported each year. More than a quarter of these came from Finland and the remainder from France, Portugal, North America, Russia and other Baltic States. Of these sources of supply only France, Portugal and North America remain available, but their joint contribution falls far short of our normal requirements. Investigation by the Mines Departent indicates that it is possible to manufacture concrete props which will be suitable for use at the face.

Timber Control: Import of Veneer.

The Minister of Supply has made the Control of Timber (No. 11) Order, 1940, which provides that, on and after April 15, no person being in or ordinarily resident in the United Kingdom shall buy any veneer situate outside the United Kingdom, except under the authority of a licence granted, or a direction issued, by the Minister of Supply. Contracts in writing entered into before April 15, 1940, are not affected by the terms of the No. 11 Order. Applications for licences to buy veneer from abroad should be addressed to the Timber Control, Ministry of Supply, Clifton Down Hotel, Bristol, 8. Copies of this Order are obtainable directly, or through any bookseller, from H.M. Stationery Office at the published sale price.

Home-grown Timber: Summer Felling and Conversion.

The Ministry of Supply states that to meet the greatly increased demand for home-grown timber it is highly undesirable that there should be any relaxation of felling and conversion during the summer months. The disadvantages, which are well known to timber producers, cannot be avoided in the present circumstances, but it may be worth while pointing out that, in the case of pine, blue stain can be reduced, or even prevented, by quick conversion after felling, the use of certain chemical solutions, and open piling of the converted material. This question has been studied by the Forest Products Research Laboratory, Princes Risborough, which is prepared to answer inquiries.

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A.R.P. SCHEMES

LONDON.

BANSTEAD.—For public surface shelters at Kingswood recreation ground (one shelter for 50 persons), Tattenham Way recreation ground (two shelters for 50 persons each), and on land at rear of Church Hall, Tadworth (one shelter for 100 persons), U.D.C. accepted the tenders of H. Bacon and Son, Ltd., of Coulsdon, at £725.

CATERHAM AND WARLINGHAM.—U.D.C. to erect cleansing station, at £1,207.

GREENWICH.—B.C. recommend Thomas and Edge, Ltd., 25, Greens End, Woolwich, S.E.18, for conversion of existing premises at Blackheath depot into cleansing station, at £816.—Approval of Ministry of Home Security and owners of No. 28, Blackheath-road, to the adaptation of basement of premises as public shelter to accommodate 70 persons, received.

ROMFORD.—For public shelters in Rush Green-road and Balgores-lane, tender of Balls and Partners, at £2,454 17s., accepted by T.C. in place of tender withdrawn.—C.C. to be approached as to provision of shelters to accommodate 50 persons each at junction of Mawney-road and Eastern-av. and at Gallows-corner. Estimated cost of shelters £200 each.—Ministry of Home Security approved for grant purposes £285 in respect of draining of shelters in Hulse-av.—Plans passed: Shelter, Shell-Mex depot, London-road.

SOUTHALL.—Shelters proposed at isolation hospital, at £661. B.S. to invite tenders from selected firms.—Plans passed for decontamination and first-aid station, Bridge-road, for Poulton and Noel, Ltd., of Southall.

WESTMINSTER.—J. W. Falkner and Sons, Ltd., 24, Ossory-street, S.E.1, are erecting shelters in St. James's-square, S.W.1, for the Westminster City Council.

PROVINCIAL.

ASHTON-UNDER-LYNE.—Pike and Son, Guide-lane, Hooley Hill. Manchester, contractors for T.C. for communal shelters. Plans by W. Wilson, B.S.

BATLEY.—T.C. to erect 28 pill-box shelters to accommodate 243.

BILLINGHAM-ON-TEES.—Furness Shipbuilding Co., Ltd., Haverton Hill, Billingham, accepted at £160 each, for supply of 5 temporary buildings for use as A.F.S. stations for U.D.C.

BLACKBURN.—T.C. to seek £2,857 loan sanction for 127 domestic shelters in Mill Hill district.

CARLISLE.—City Council to build shelters for Carlisle and County high school for girls. Plans by City E., 18, Fisher-street.—E.C. placed following contracts: 23 semi-sunk shelters adjoining City General Hospital for Brook-street schools, J. Laing and Son, Ltd.; 6 semi-sunk shelters adjoining Fusehill Institution for St. Cuthbert's, J. Millar, and 21 surface shelters for Grammar school and 2 surface shelters for Christ Church schools, J. and R. Bell, Ltd. Plans by P. Dalton, A.R.I.B.A., City S., 18, Fisher-street.

DEWSBURY.—J. Donovan, Northfield-road West, Dewsbury, contractor for wardens' post, junction of Moorlands-road and Willans-road, for T.C. M. H. Forward, Borough Architect.—T.C. received sanction for 6 communal surface shelters to accommodate 264, at £515.—T.C. to construct public trenches in Saville-road.

DROYLSDEN.—U.D.C. proposes domestic surface shelters.

GATESHEAD.—T.C. accepted tenders of J. Clark and Son, Ltd., Gregson-terrace, New Seaham, and of W. Hall, Ltd., Derwentwater-road, Gateshead, each for 100 domestic shelters.

JARROW.—Shelters to be constructed at Nursery school. Plans by J. S. Weir, B.E.

KETTERING. — T.C. to proceed with shelters at: Beach House, Tanners-lane, for 50 persons; Spital-square, for 250; Gold-street-garden, for 100; Manor House-garden, for 150; 'bus station, Northampton-road, for 450. Plans by J. P. Haugh, B.E. and S., 3, Gold-street.

LEEK.—U.D.C. propose shelters at gas works.

MANCHESTER.—W. Meredith, Wyecollar, Outwood-road. Heald Green, Ches. Contractor for shelters in New Lorne-street, Raby-street, Moss Side, for T.C.

MIDDLESBROUGH. — Further tenders accepted by E.C. for school shelters: Kendrews, Ltd., Norton, for Newport-road, £590,

and St. Paul's, £141.—Stephen Coates, Ltd., Middlesbrough, for Denmark-street, £264, St. Patrick's senior, £117, St. Patrick's junior, £147, and St. Mary's, £264.

MIDDLESBROUGH. — T.C. approved plans for following shelters for E.C.: St. Paul's school, St. Paul's-road; Newport-road school, Greta-street, and Marsh-road school, Marsh-road.

NEWCASTLE-UPON-TYNE. — W. Dixon and Sons, 1, Collingwood-street, architects for proposed basement shelter at Emerson-chambers.

NEWCASTLE (STAFFS).—T.C. propose additional public shelters for 2,100 persons. Plans by A. Cotton, B.S.

SCARBOROUGH. — T.C. received M.H. consent to borrow £3,100 for school shelters.

SOUTH SHIELDS.—T.C. to build further public shelters on 15 sites for 2,800 people. Plans by Mr. Richardson, Acting B.E.

STOCKPORT.—W. F. Gardner, B.E., to prepare plans for public communal shelter in King's-drive, Heaton Moor.

SUNDERLAND.—Contract for shelter at works of Davis and Co. been let to R. H. Snowdon, Belford-road. Architects, Matkin and Hawkins, Barclays Bank-chambers.

WALLSEND.—T.C. propose more communal and domestic shelters. Plans by J. Blench, B.E.

WORTHING.—Plans for conversion of covered way between chalets at Beach House into air raid shelter for 260 people approved by T.C.

SCOTLAND.

AYR.—Corporation to erect from plans by the Burgh Architect, cleansing stations and depots in Syms-lane, Wallace-street and Walker-road.

FIFESHIRE. — County Architect, G. Sandilands, St. Catherine's-street, Cupar, prepared plans for C.C. for shelters to cost approximately £5,000.

GLASGOW.—Corporation had plans approved for shelters at Albert New school. W. McNab, architect, 129, Bath-street—Following shelters to be erected: At Dalmarnock, and also at the Provan chemical works, T. Somers, architect, City Engineer's Office, Municipal-buildings. Contractors: Hunter and Clark, Ltd.—At Martyn public school, Launcelot H. Ross, architect and quantity surveyor, 221, West George-street. Contractors: Shaw and Campbell, Ltd.—At Ruchill public school, J. Taylor, architect, 220, West Regent-street. Contractors: Brown, Fraser and Co., Ltd.—At Crookston-street public school, J. Thomson, architect and quantity surveyor, 136, Wellington-street. Contractors: R. N. Gibson and Co., Ltd., and G. and W. Mossman, Ltd.—At Sydney-street school, J. Taylor, Thomson and Partner, architects and quantity surveyors, 212, Bath-street. Contractors: J. Green and Co., Ltd.—At Penniston-street school, Anderston, S. Buntin, architect and quantity surveyor, 237, Bath-street. Contractors: W. Buchanan.—At Holy Cross school, W. Baillie and Son, architects and quantity surveyors, The Accountancy Hall, West Nile and West Regent-streets junction. Contractors: R. Gibson and Co., Ltd. All architects and contractors of Glasgow.

OAKBANK.—Plans prepared for shelters at the Oakbank public school by W. J. B. Wright and Kirkwood, architects and quantity surveyors, Carlton House, Blythswood-square, Glasgow. Contractors are Hugh Broadley and Co., Ltd., Pollockshields, Glasgow.

NEW BUILDINGS IN LONDON

GREENWICH.—BUILDING.—The B.C. recommend plans for first-aid station at Telcon-works, Christchurch Way; rebuilding of the "Hatcliffe Arms" beerhouse, Blackwall-lane; and extension to the Broadcast relay station at Telcon-works, Blackwall-lane.

SOUTHALL. — BUILDING. — The T.C. has passed plans for a non-bottling distributing dairy and garage, on the north side of Western-road, adjoining No. 152, for the London Co-operative Society, Ltd.; addition to the cold storage buildings, in Bridge-road, for Messrs. Poulton & Noel, Ltd., of Southall.

STRATFORD.—OFFICES.—Plans have been approved for new offices and factory premises in Romford-road, Stratford, for Messrs. R. G. Harbott & Co., Ltd., 242, Sebert-road, E.7. The architects are Messrs. H. G. Needham & Son, of 139, Earlham-grove, Forest Gate 1.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A.) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A.; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING.

APRIL 23.

Crosby T.C.—6 brick and concrete surface shelters, Crosby-rd. South and Fort-rd., Seaforth. J. R. Fothergill, B.E. and S. Dep. £1 1s.

Hemsworth U.D.C.—Public conveniences, Gorton-st., Kinsley. A. Wright. Dep. £1 1s.

APRIL 24.

Bristol T.C.—Domestic communal surface shelters. City Engineer's Dept., A.R.P. (Protection), 34, Apsley-rd., Clifton, Bristol, 8.

Manchester T.C.—Garage at Ringway airport. City Architect. Dep. £1 1s.

Rochdale C.B.—Electricity sub-station at Ending. B.S.

APRIL 25.

Newcastle-upon-Tyne T.C.—A.R.P. cleansing and first-aid station at Byker car sheds, Fossway. T. P. Easton, general manager, Transport and Electricity Undertaking. Dep. £1 1s

Southport C.B.—Tuberculosis pavilion at New Hall Hospital, Scarisbrick. B.E. Dep. £1 1s.

APRIL 26.

Baildon U.D.C.—Garage rear of Town Hall. P. A. Watford, E. and S.

Sutton and Cheam T.C.—Conversion of an existing garage into laundry for decontamination of protective clothing. N. H. Michell, B.E. and S. Dep. £2.

APRIL 27.

Downpatrick R.D.C. — Alterations and renewals at Castlewellan waterworks. E., 24, Arthur-st., Belfast. R. J. Carr, C., Council Offices, Downpatrick.

Farnham U.D.C.—A.R.P. cleansing station at open-air swimming baths, off South-st. L. H. Starling, E. and S. Dep. £1 1s.

Glamorgan C.C.—Air raid precautions cleansing centre at Llantwit Major. D. J. Parry, Deputy Clerk of C.C., County Hall, Cardiff.

Keighley T.C.—500 lin. yds. of timber seating with brick supports in public shelters. R. C. Gibson, B.E. and S.

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Reigate T.C.—Concrete trench shelter, in Station-rd., Redhill. G. G. Sanderson, B.S. Dep. £1 1s.

Royton U.D.C.—Domestic surface shelters: 12, Dogford ward and 31 Haggate ward. S.

APRIL 29.

Aberdeen T.C.—Work in connection with construction of transforming sub-station at Duthie-tce., Mannofield. City Electrical E., Millburn-st.

Biggleswade Water Board.—Pair of semi-detached cottages, Newspring. A. Singleton, architect, 105, Biggleswade-rd., Caldecote. Dep. £2 2s.

Erith T.C.—Transformer station, Station-rd., Belvedere. J. H. Clayton, B.E. and S. Dep. £1 1s.

Ipswich C.B.—Alterations and additions to St. John's Home. E. McLaughlan, B.S. and Water E. Dep. £2 2s.

Kerrier R.D.C.—Pumping plant, building of pump-house and laying of 560 yds. of cast-iron mains, etc., in connection with Leedstown water scheme. W. H. Moffatt, E. and S. Dep. £1 1s.

Sheffield T.C.—A.R.P. depots at Aigar-rd., Arbourthorne; Norcross-av., Tinsley; Shiregreen-la., and Manor-la. W. Geo. Davies (F.), City Architect. Dep. £2.

Sutton and Cheam T.C.—Brick surface shelters for 310 persons. N. H. Michell, B.E. and S. Dep. £2 2s.

Warrington C. Gas Dept.—Reinforced concrete gantry. A. Cook, Engineer and Manager, Gas Offices, Mersey-st.

APRIL 30.

Enfield U.D.C.—30 shelters. E. and S., 7, Little Park-gdns. Dep. £1 1s.

MAY 1.

Blackrod U.D.C.—Two semi-sunk shelters and 1 surface shelter. S.

Spenborough U.D.C. — Alteration of premises known as Elm Bank, Bradford-rd., Cleckheaton, into health centre. J. Wallbank, E. and S. Dep. £2 2s.

MAY 3.

Faringdon R.D.C. — Foundations for pressure filtering plant and wash-water treatment works, comprising settling tanks and sludge lagoons and incidental works. A. H. S. Waters, E., 25, Temple-row, Birmingham, 2. Dep. £3 3s.

Wallingford T.C.—Entrance to Bull Croft from St. George's-rd., Wallingford. B.S.

MAY 4.

Gillingham T.C. — Mortuary, Woodlands Cemetery. B.S. Dep. £1 1s.

Preston C.B.—Renovation of sanitary offices at Roebuck-st. council school. B.E.

MAY 7.

Midleton U.D.C.—3 houses. E. Dep. £5.

MAY 10.

Bristol Corporation.—Reconstruction of No. 1 boiler house roof at Portishead generating station. A. J. Newman, Chief E., Electricity Dept., Colston-av. Dep. £2 2s.

MAY 11.

Dublin T.C.—250 four-roomed houses, Cabra West housing area, section No. 2A. H. G. Simms, Housing Architect, 5, Wellington Quay. Dep. £5 5s.

York T.C.—Precast concrete blocks for use in protecting buildings from blast and splinters. C. J. Minter, City E. Dep. £1 1s.

MAY 15.

North Cotswold R.D.C.—36 houses. J. E. Busfield, S., Council Offices, Moreton-in-Marsh, Glos. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, HEATING, &c.

APRIL 19.

†Gloucester T.C.—Installation of central heating and domestic hot and cold water supplies systems in operating theatre, etc., at City General Hospital. A. Morgan, City Architect, Suffolk House, Greyfriars. Dep. £3 3s.

APRIL 20.

†**Ipswich E.C.**—Redecoration of certain schools. Johns and Slater (F. & A.), 8, Lower Brook-st.

APRIL 23.

Darlaston U.D.C.—Exterior painting of 241 council houses. H. N. Hughes, E. and S. Dep. £1 1s.

Docking R.D.C.—Painting houses. J. H. Marshall, C.

Oldham C.B.—Repairs to retort chimneys at the Hollinwood gas works, Gas-st., Failsworth. F. Greenhalgh, Gas and Water Offices, Greaves-st.

APRIL 24.

Norfolk C.C.—External painting work, Poor Law Institution, Extons-rd., King's Lynn. County Architect, 25, Thorpe-rd., Norwich.

APRIL 25.

Abingdon Joint Hospital Board.—Electric wiring and equipment of blocks 1 and 3, Abingdon isolation hospital. A. B. West (F.), architect, 9, Bridge-st.

Ketton R.D.C.—Painting outside of council houses in various parishes. L. J. Roll, Sanitary Inspector, 2, Ye Olde Barn Cottages, West End, Stamford.

St. Faith's and Aylsham R.D.C.—External painting of 90 houses. E. R. Larner, Housing S., Tudor Hall, Rose-lane, Norwich.

York County Hospital.—Painting and cleaning interior of hospital. J. R. Mackrill, Sec.

APRIL 26.

Carlisle T.C.—Painting 2 gas holders at gasworks. Gas E. Dep. £1 1s.

Edinburgh T.C.—External painting work of 172 houses at Lochend housing area. City Architect.

Harrow (H.M.O.W.).—Installation of electric lighting and power services, etc., at H.M. Stationery Office, Harrow. H.M.O.W., Abell House, John Islip-st., S.W.1. Dep. £1.

Keighley and District Victoria Hospital.—Electric wiring and lighting of main corridor of the Keighley and District Victoria Hospital. J. Young, secretary-superintendent.

APRIL 27.

Aberayron C. of E. School.—Alterations, improvements to playground and new drainage, etc., for managers. J. Lewis-Evans, architect and surveyor, Aberystwyth.

Cheshire C.C.—Painting and decorating and builders' and joiners' work, for administrative sub-committee for education for Northwich district area. E. P. Thomas, C., Education Office, Northwich.

Southampton C.B.—Exterior repairs and decorations to 1,216 houses. Housing Manager's Office, 4, Albion-ter.

APRIL 29.

Banbridge U.D.C.—Rewiring of 26 houses at Mount Pleasant and rectifications to installations in 30 houses in Golf-ter. and 50 houses in Edenderry-gdns. W. J. Mulligan, T.C., Council Office, Market-yd. Dep. £5 5s.

Biggleswade Joint Hospital Board.—General works or repair, painting and redecoration at nurses' quarters, Isolation hospital, Potton-rd. P. R. Chaundler, C., 2, London-rd.

Glasgow Statute Labour Dept.—Various jobbing works and supplying materials. W. Kerr, T.C.

Hindley U.D.C.—Inside painting and decorating of 52 houses, Atherton-rd., and outside painting of 84 houses, Thomas-st., Carlton-gr., Rayner-av., Platt-la., Moss-la. O. P. Abbott, S. Dep. £1 1s.

APRIL 30.

Chester C.C.—Painting and decorating, plumbing, asphalt paving and small building contracts. F. Anstead Browne (F.), County Architect, The Castle, Chester.

Poole T.C.—Painting and decorations to council houses. Housing Estates Manager. Dep. £1 1s.

Thirsk.—Painting outside of Sutton Institute. L. Lumley, Sutton, Thirsk.

West Midlands Area (H.M.O.W.).—Installation of steam and compressed-air mains. Room 425, Fourth Floor, Abell House, John Islip-st., London, S.W.1. Dep. £1.

MAY 1.

Cumberland C.C.—External painting at police stations, police houses and roadmen's houses. J. H. Haughan (A.), County Architect, 4, Alfred-st. North, Carlisle.

Totnes T.C.—External decoration of 58 houses at Smithfields and 24 houses in Station-rd. Joseph W. Smith, B.E. and S., 10, High-st. Dep. £1 1s.

MAY 3.

Liverpool T.C.—Internal and external painting at certain elementary schools. City E. and S. Dep. £1 1s.

MAY 9.

***Coulsdon and Purley U.D.C.**—External painting work at various council housing schemes. S. Dep. £1 1s.

MAY 15.

West Riding C.C.—Painting police buildings. Architect, County Hall, Wakefield.

NO DATE.

Cardiff. — Painting and decorating at Cathays Conservative Club. Sec.

Wakefield.—External painting of various buildings at Carr Gate Hospital, for Wakefield Rural, Stanley, and Morley Councils' Joint Hospital Committee. A. Elstone, clerk, 18, St. John's North, Wakefield.

MATERIALS, &c.

The materials for which tenders are invited normally include one or several of the following —asphalt, bricks, brooms, building lime, cast-iron pipes, cement, stoneware pipes, granite chippings, granite kerbs, gravel, gulleys, lime, manhole covers, painters' materials, plumbers' materials, road stone, slates, sand, stone, tar, tarslag and bituminous macadam, timber, and whinstone screenings. Readers should obtain full particulars by personal inquiry.

APRIL 23.

Newhaven U.D.C.—C. G. Mainwood, C.

APRIL 24.

Aberdeen T.C.—T. F. Henderson, City E. and Water E.

†**Newcastle-under-Lyme T.C.**—B.S.

Rhyl Gas and Water Depts.—Gas and Water E.

Ross and Cromarty C.C.—Tar and bitumen compound for surface dressing. C.S., Dingwall.

APRIL 25.

Belfast Gas Dept.—E. and Manager, Gasworks, Ormeau-rd.

Haltemprice U.D.C.—T. C. Slack, E. and S.

APRIL 26.

Carlisle T.C.—Paint. Gas E., Gasworks.

APRIL 27.

Ayr C.C.—J. R. Lockie, County Clerk, Ayr.

Glasgow.—Baths and wash-houses Dept. General Manager, 38, College-st.

APRIL 29.

Cwmbran U.D.C.—T. J. Price, S.

NO DATE.

Dover T.C.—Granite. Wm. Boulton Smith, B.E. and S.

ENGINEERING, IRON AND STEEL.

APRIL 23.

Pontypridd and Rhondda Joint Water Board.—Purification works at reservoir, Cilfynydd. W. E. Holmes-Watkins, Consulting E., 23, Gelliwastad-rd., Pontypridd. Dep. £5 5s.

APRIL 24.

Wigtown C.C.—Storage reservoir, together with relative works, on Dinvin Burn. Crouch and Hogg, chartered civil engineers, 17, Woodside-cres., Glasgow, C.3. Dep. £3 3s.

APRIL 25.

Essex Rivers Catchment Board.—Remodelling Beam River, including approx. 22,000 cu. yds. excavation, stone pitching, etc., in Dagenham and Hornchurch. W. J. S. Bew, C., Essex Rivers House, Springfield-rd., Chelmsford. Dep. £1.

Macduff T.C.—Cutting about 4 miles of pipe tracks, and laying and jointing asbestos, cement, steel and iron pipes therein, fixing valves and fittings, enclosing of springs and construction of collecting tanks, etc. B.S. Dep. £2 2s.

South African Railways and Harbours (Stores Department).—Mild steel parachute water tank. Chief Stores Superintendent, Room 3, Harbours Offices, Rissik-st., Johannesburg. Dept. of Overseas Trade, S.W.1. (Ref. T. 17391/40.)

APRIL 27.

Chingford T.C.—Laying reinforced concrete raft at Larkswood Pool car park. S. J. Hellier, B.E.

APRIL 30.

Australia. — Feed-water heating and evaporating plant, boiler feed pumps, pipework and accessories for State Electricity Commission of Victoria. Dept. of Overseas Trade, S.W.1. (Ref. T.Y. 17684/40.)

ROAD, SEWERAGE AND WATER WORKS.

APRIL 23.

Southport C.B.—Making-up of part of Balmoral-dr. B.E. Dep. £2 2s.

APRIL 24.

Witney R.D.C.—Laying of approx. 200 yds. of 3-in. cast-iron water main and fittings at Carterton. S., 103, High-st.

APRIL 25.

Birkenhead C.B.—Taking up of tram rails, cleaning and cutting and reinstatement in certain streets. B.E. and S.

Chepping Wycombe T.C.—Laying of approx. 350 lin. yds. of 6-in. glazed stoneware pipe sewer in School-close, together with necessary house connections. J. A. Parkinson, B.S.

APRIL 26.

Warwick R.D.C.—Tarmac surfacing and drainage works in parishes of Barford and Cubbington, at Leek Wootton. E. A. Lyne, S.

APRIL 29.

Dewsbury C.B.—Supply and laying of approx. 3,500 sq. yds. of two-coat asphalt road surface. B.E.

Meriden R.D.C.—Approx. 470 lin. yds. of 12-in. dia. and 160 yds. of 6-in. dia. pipe sewer, together with manholes and incidental works. H. Pickering, E. and S. Dep. £2 2s.

MAY 1.

Irvinestown R.D.C.—Laying 290 yds. of 1½-in. galvanised iron water pipe at Lack. S. T. Aiken, C. Dep. £1.

Luton T.C.—Final make-up of Linden-rd. F. Oliver, B.E. and S. Dep. £2 2s.

MAY 4.

Tarvin R.D.C.—Approx. 7½ miles of cast-iron water mains. E. and S.

W. C. YOUNGMAN LTD
WANDSWORTH WORKS
WANDSWORTH ROAD
LONDON S.W.8

Public Appointments.

APRIL 23.

Lincoln T.C. — Manager, Corporation's Building Dept. A. Adlington, City E. and S., Silver-st.

APRIL 25.

Glamorganshire C.C. — Drainsman at Hensol Castle Certified Institution for Mental Defectives, near Pontyclun. D. J. Parry, Deputy Clerk, County Hall, Cardiff.

APRIL 30.

***Brandon and Byshottles U.D.C.**—Temporary Architectural Assistant. F. Hedley (A.), Architect, Council Offices.

NO DATE.

***London.**—Several temporary Builders' Clerks in connection with A.R.P. work for a Metropolitan Borough Council. Write Box 913, c/o Whites, Ltd., 72, Fleet-st., E.C.4.

***War Dept.**—Architectural and Engineering Assistants Grade III in office of Commander, R.E.'s., Plymouth district. C.R.E., Plymouth District, R.E. Office, Cumberland Block, Devonport.

PUBLIC WORKS

LLANGEFNI, ANGLESEY.—The U.D.C. have been authorised by the M.H. to seek tenders for the first 16 of their 48 houses in the scheme of slum clearance and rehousing in Bridge-street. The architect is Mr. T. Alwyn Lloyd, F.R.I.B.A., 6, Cathedral-road, Cardiff.

CURRENT AND PROPOSED BUILDING WORK*

Billingham-on-Tees.—U.D.C. propose to convert about 100 houses to water carriage system at Kelviston.

Birkenhead.—T.C. received M.H. sanction to proceed to completion with contracts for remaining six flats, Mount-gr., and 40 tenements, section No. 4 of Dock Cottages redevelopment scheme.

Blackpool.—Headmaster reported need of pointing brickwork at rear of Little Marton C.E. school, and managers gave instructions. —T.C. to invite tenders for decoration of various branch libraries.—Plans passed: T. Harrison, Crompton-av., four houses, one garage; Burgons, Ltd., Bond-st.-Dean-st., additions and alterations.

Brandon.—U.D.C. received sanction to build 100 houses. J. P. Addison, architect, Council offices.

Chelmsford.—T.C. approved £450 on repairs to swimming baths—B.E. submitted approximate estimates of repairs to be carried out on Boarded Barns and Rainsford-la. estates at £13,324.

Chesterfield.—Committee of Bishop of Derby's Appeal Fund decided to complete St. Mark's Church hall, Brampton, at £10,000.

Coventry—T.C. approved: 19 houses (amended), Benson-rd., R. R. Button; church building (amended), Spon End, Bethel Evangelical Church; additions to offices, Torrington-av., C. Weston & Co., Ltd.; test houses, 24 and 25, Quarryfield-la., Armstrong-Siddeley Motors, Ltd.; shops and showrooms, Fleet-st., Coventry Business Estates, Ltd.; extension to offices, Telephone-rd., General Electric Co., Ltd.

Darlington.—T.C. approved: Co-operative Society, alterations to premises, Middleton-st.; Messrs. Joseph, architects, for N.A.A.F.I., warehouse and office, Whessoe-rd.

Liverpool.—Electricity Commission sanctioned borrowing by Corporation of £56,511 for work in connection with supply of electricity to new factories.—Land in Lyme-gr., Longview estate, to be sold to Longview Labour Party Ward Ass.—Land in Stapleton-av., Speke estate, to be sold to Roman Catholic Church Authorities.

Manchester.—T.C. approved: Additions, "The Foresters' Arms," George-st., Hulme, Groves and Whitnall, Ltd. (Brameld & Smith, architects, 4, Cannon-st.); additions to factory, 4, Temple-st., for Knibbs, Ltd. (J. E. Kewell, architect, 290, Oxford-rd.); works adjoining Grosvenor Garage, Burnage-la., Levenshulme, for A. Freeman, Burnage-la. (W. C. Coulson, architect, 29, Westholme-rd., Withington); extension of engineering works, Ambergate-st. and Forrest-st., Beswick (architects, Roberts, Wood & Elder, 26, King-st.); conversion of six shops and houses into six houses, 245-255, Hyde-rd., Ardwick, Exors. of J. M. Bennett (Batey, Markham, Heywood & Co., architects, 90, Deansgate); additions to offices, Gorton-la., for Crossley Motors, Ltd. (Taylor & Young, architects, 19, Chapel-walks); extension to existing bottling stores, Claremont-rd., Moss Side, for Whitbread & Co., Ltd., Britannia-st., Gray's Inn-rd., London, W.C.1; alterations, "The Temple Bar," 3, Macdonald's-la. and Blue Boar-court, for Walker & Homfray, Ltd., Woodside Brewery, Eccles New-rd., Salford (G. Westcott & Son, architects, 31, Byrom-st.); extension to works, Queen-st., Bradford, for Francis Shaw & Co., Ltd., Cobbett-st. (S. Moss, architect, 2, St. Ann's-sq.).

Milford Haven.—Consideration given by Council to a proposal by Co-operative Property Corporation, Ltd., to erect working-class houses.

Newcastle-on-Tyne. — Licensing Justices confirmed removal of licence of "Westmorland Arms" to new premises at Silver Lonnen for A. Deuchar, Ltd., 19, Lovaine-pl. Architect, F. M. Dryden, 6, Market-st.—Provisional licence granted to Archibald Arrol and Son, West Blandford-st., for new "Fawdon Arms" hotel at Fawdon, confirmed. Architect, C. S. Errington, 46, Grainger-st.

Nuneaton.—T.C. approved: W. Weddel & Co., alterations and additions to factory, Church-st.; Nuneaton Timber Co., Ltd., extensions to offices, Regent-st.

Seaham.—U.D.C. pressing L.N.E.R. to accelerate its work on bridge work which is part of £120,000 scheme for new road. Work on road in hand, but L.N.E.R. not yet started on bridges.

Sheffield.—T.C. approved: alterations, Clarence-st. and Hodgson-st., Wm. Stones, Ltd.; six houses, saleshops and two garages, Carterknowle-rd. and Springfield-av., G. Handley; licensed premises with living accommodation, Herries-rd., Tennant Bros., Ltd.; warehouse additions and alterations, Cross Smithfields, John Truswell, Ltd.; melting shop, Carbrook-st., Wm. Jessop & Sons, Ltd.; messrooms, Rutland-rd., Wm. Stones, Ltd.; additions, Hawke-st., English Steel Corporation, Ltd.; additions, Stevenson-rd., English Steel Corporation, Ltd.; factory and air raid shelter, Arundel-st. and Eyre-la., M. M. Bell & Sons; sports pavilion, Livesey-st., Electricity Committee; additions and alterations to form office, Newhall-rd., Hadfields, Ltd.; additions to factory, Janson-st. and Dunlop-st., English Steel Corporation, Ltd.; extension to valve shop, Penistone-rd., Daniel Doncaster & Sons, Ltd.; rolling mill, Neepsend-la., Andrews, Toledo, Ltd.

South Shields.—Additions proposed to factory, corner of Readhead-st. and St. Hilda-st., for Wire Rope Manufacturing Co., Ltd. Architect, F. W. Newby, 10, King-st.

Stoke-on-Trent.—T.C. approved: A. Meakin (Tunstall), Ltd., Newfield Pottery, High-st., Tunstall, tunnel kiln and warehouse; Parkers (Burslem) Brewery, Ltd., "Royal Oak," Leek-rd, corner Austin-st., Hanley, alterations; Parkers (Burslem) Brewery, Ltd., "Welsh Harp," Newcastle-rd., corner Edward-st., Shelton, alterations; North Staffs Royal Infirmary, Princes-rd, Hartshill, office block; Wiltshaw & Robinson, Ltd., Carlton-wks., Copeland-st., warehouse and packing house; Parkers (Burslem) Brewery, Peel-st., Dresden, alterations; Owen & Co., Station-gr., Milton, 21 houses; W. Walker & Sons, Century-wks., Brook-st., Hanley, garage; Michelin Tyre Co., Ltd., Campbell-rd., Stoke-on-Trent, additions buildings Nos. 1 and 2.

Stretford.—T.C. to invite tenders for exterior painting of 272 houses, Lostock estate, and interior renovating of 137 houses, Bradshaw-la., Nelson-st. and Cooper-st.—Plans passed: Combustion test-room, Westinghouse-rd., and X-ray research extension, Westinghouse-rd., Metropolitan-Vickers Electrical Co., Ltd.

Sunderland.—A. Pearson, Melvyn-gdns., Fulwell, architect for improvements to "Wagon Tavern," Brook-st., for J. W. Cameron and Co.—T. A. Page, Son, and Bradbury, 75, King-st., South Shields, architects for improvements to "Olive Branch" hotel, Howard-st., for Aitchison and Co.—Improvements to be made to "Derby" hotel, Philip-ter., for J. Wilson. Architects, W. and T. R. Milburn, 17, Fawcett-st.—Matkin and Hawkins, Barclays Bank-chams., Fawcett-st., prepared plans for additions in Borough-rd., and bank, Tatham-st., for Jennings Winch and Foundry Co., Ltd.

Wembley.—T.C. approved: J. Laing & Son, Ltd., canteen, Carlisle-rd.; Bengue & Co., store building, Mount Pleasant.

Woolwich.—B.C. recommend permanent works to shaft in Verdun-rd. and two shafts in Alliance-rd. between Southland-rd. and Verdun-rd. be filled in, at £1,638.—Permanent works to be carried out to shaft sunk in Alliance-rd. open space, at £300.—Drying-room with changing-room built over, in accordance with plan prepared by B.E., to be erected at White Hart-rd. depot, Plumstead, at £450.

Worthing.—T.C. approved: Wratten & Godfrey, for Vicar and Churchwardens of St. Symphorian Church, additions to St. Symphorian Church, Durrington Hill; West Sussex Coast Development Co., Ltd., 12 houses and garages to front Goring-way.

Worksop.—T.C. approved: Cricket pavilion, Shireoaks Cricket Ground, for Shireoaks Miners' Welfare Committee. B. D. Thompson (F.), architect, 83, Bridge-st.

* See also List of Contracts Open.

***** In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced.**

BUILDING ILLUSTRATED

CHURCH OF CHRIST SCIENTIST, DERBY.

For this church (designed by Messrs. Arthur Eaton and Son, F.R.I.B.A., Brailsford, near Derby, and illustrated on page 477) the general contractors were Messrs. J. H. Fryer, Ltd., Derby, and the following is a list of sub-contractors:—

Electric light fittings, Allom Bros.; electrical contractors, Alex. M. Curr; "Macasfelt" roof covering (flats), D. Anderson and Son, Ltd.; terrazzo floors and skirtings for cloaks and lavs., Art Pavements and Decorations, Ltd.; extract vent and fans, Thos. Ash and Co.; Hammond organ, Boosey and Hawkes; constructional steelwork, John Booth and Sons, Ltd.; "Thistle" acoustic plaster to ceilings, Cafferata and Co., Ltd.; metal windows, Crittall Manufacturing Co.; sanitary fittings, Thos. Crump and Co.; fanlight grilles, Dryad Metal Works; oak block floors, J. A. Hewitson and Co., Ltd.; "Lithocrete" to site concrete, Limmer and Trinidad Lake Asphalt Co.; rubber flooring to foyer, Redferns Rubber Works, Ltd.; oak pews, Seco, Ltd.; precast steppings to wing seating, Siegwart Fireproof Floor Co., Ltd.; stone dressings and copings, The Stancliffe Estates Co.; heating installation (panel heating and radiators), G. N. Haden and Sons, Ltd.; decorative plasterwork and organ grilles, W. J. Wilson and Son; precast flat roofs and suspended ceilings, Trussed Concrete Steel Co., Ltd.; cork carpet, Super Floors, Ltd.; bricks (facings), Proctor and Lavender; and ironmongery, Wing and Webb, Ltd.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1940

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors]

	Crafts-men.	Lab-ourers.
Aberavon	1/8½	1/3½
Aberdare	1/8½	1/3½
Abergavenny	1/8½	1/3½
Abingdon	1/7	1/2½
Accrington	1/8½	1/3½
Aldeburgh	1/5	1/1
Aldershot	1/7	1/2½
Alfreton	1/8½	1/3½
Alnwick	1/8	1/3½
Altrincham	1/8½	1/3½
Amble	1/8	1/3½
Amersham	1/7	1/2½
Ammanford	1/8½	1/3½
Andover	1/6½	1/2½
Ardingley	1/6½	1/2½
Arundel	1/6½	1/2½
Ascot	1/6½	1/2½
Ashby-de-la-Zouch	1/8½	1/3½
Ashford (Kent)	1/6½	1/2½
Ashford (Middlesex)	1/8½	1/3½
Ashington	1/8	1/3¼
Ashtead	1/8½	1/3½
Ashton-under-Lyne	1/8½	1/3½
Aylesbury	1/6½	1/2½
Aylsham	1/5½	1/1½
Bagshot	1/6½	1/2½
Banbury	1/6½	1/2½
Barnsley	1/8½	1/3½
Barnstaple	1/6½	1/2½
Barrow-in-Furness	1/8½	1/3½
Barry	1/8½	1/3½
Basingstoke	1/6½	1/2½
Bath	1/8	1/3¼
Batley	1/8½	1/3½
Beaconsfield	1/7	1/2½
Beccles	1/5	1/1
Bedford	1/8	1/3¼
Berkhamsted	1/6½	1/2½
Berwick	1/8	1/3¼
Beverley	1/8½	1/3½
Bexhill-on-Sea	1/7	1/2½
Bideford	1/6½	1/2½
Biggleswade	1/6½	1/2½
Billericay	1/6	1/1½
Birchington	1/6½	1/2¼
Birkenhead	‡§1/10½	¶
Birmingham†	1/8½	1/3½
Bishop Auckland	1/8½	1/3½
Bishops Stortford	1/7½	1/3
Blackburn	1/8½	1/3½
Blackpool	1/8½	1/3½
Blyth	1/8½	1/3½
Bognor Regis	1/6½	1/2½
Bolton	1/8½	1/3¾
Bournemouth	1/7½	1/3
Bracknell	1/6½	1/2½
Bradford	1/8½	1/3½
Bradford-on-Avon	1/5½	1/1½
Braintree	1/6½	1/2¼
Brentwood	1/8	1/3¼
Bridgwater	1/7	1/2½
Bridlington	1/8	1/3¼
Brighouse	1/8½	1/3¼
Brighton	1/7½	1/3
Bristol	1/8½	1/3½
Broadstairs	1/6½	1/2½
Bromsgrove	1/8	1/3¼
Buckley	1/8½	1/3½
Bungay	1/4½	1/0½
Burnham-on-Crouch	1/5	1/1
Burnley	1/8½	1/3¾
Burslem	1/8½	1/3½
Burton-on-Trent	1/8½	1/3½
Bury	1/8½	1/3½
Bury St. Edmunds	1/6	1/1½
Buxton	1/8	1/3¼
Byfleet	1/7	1/2½
Cambridge	1/8½	1/3½
Canterbury	1/6½	1/2¼
Cardiff	1/8½	1/3½
Carlisle	1/8½	1/3½
Carnforth	1/8½	1/3½
Castleford	1/8½	1/3½
Caterham	1/8½	1/3½
Chard	1/5½	1/1½
Chatham	1/7½	1/3
Chelmsford	1/8	1/3¼
Cheltenham	1/7½	1/3
Chepstow	1/8	1/3¼
Chertsey	1/7½	1/3
Chester	1/8½	1/3½
Chesterfield	1/8½	1/3½
Chichester	1/6½	1/2½
Chorley	1/8½	1/3½
Cirencester	1/6	1/1½
Clacton	1/6½	1/2½
Cleveleys	1/8½	1/3½
Clitheroe	1/8½	1/3½
Cobham (Surrey)	1/7½	1/3
Colchester	1/8	1/3½
Colwyn Bay	1/7½	1/3
Congleton	1/8	1/3½
Coventry	1/8½	1/3½
Cranbrook	1/6½	1/2½
Cranleigh	1/6½	1/2½
Crawley	1/6½	1/2½
Crewe	1/8	1/3½
Cromer	1/5½	1/1½
Crowborough	1/6½	1/2½
Cuckfield	1/6½	1/2½
Darlington	1/8½	1/3½
Darwen	1/8½	1/3½
Daventry	1/7	1/2½
Deal	1/6½	1/2½
Denbigh	1/7½	1/3
Derby	1/8½	1/3½
Devizes	1/5½	1/1½
Dewsbury	1/8½	1/3½
Didcot	1/6½	1/2½
Diss	1/5	1/1
Doncaster	1/8½	1/3½
Dorchester	1/6	1/1½
Dorking	1/7	1/2½
Dover	1/6½	1/2½
Dovercourt	1/6½	1/2½
Driffield	1/7	1/2½
Droitwich	1/8	1/3¼
Dudley	1/8½	1/3½
Dunstable	1/7	1/2½
Durham City	1/8½	1/3½
Eastbourne	1/7½	1/3
E. Glam. (Mon. Val.)	1/8½	1/3½
East Grinstead	1/6½	1/2½
Edenbridge	1/6½	1/2½
Ely	1/5½	1/1½
Epping	1/8½	1/3½
Exeter	1/8	1/3¼
Exmouth	1/7	1/2½
Fakenham	1/5½	1/1½
Falmouth	1/7	1/2½
Fareham	1/7½	1/3
Faversham	1/6½	1/2¼
Felixstowe	1/7½	1/3
Filey	1/7	1/2½
Fleetwood	1/8½	1/3½
Flint	1/8½	1/3½
Folkestone	1/6½	1/2½
Frinton-on-Sea	1/6½	1/2½
Frome	1/5½	1/1½
Gainsborough	1/7½	1/3
Gateshead	1/8½	1/3½
Gillingham (Kent)	1/7½	1/3
Glossop	1/8½	1/3½
Gloucester	1/8	1/3¼
Godalming	1/6½	1/2½
Goole	1/8½	1/3½
Gosport	1/8	1/3¼
Grantham	1/7½	1/3
Gravesend	1/8	1/3¼
Great Yarmouth	1/6½	1/2½
Grimsby	1/8½	1/3½
Guildford	1/6½	1/2½
Guilsborough	1/7	1/2½
Halifax	1/8½	1/3½
Hanley	1/8½	1/3½
Harpenden	1/7½	1/3
Harrogate	1/8½	1/3½
Hartlepools	1/8½	1/3½
Harwich	1/6½	1/2½
Haslemere	1/6½	1/2½
Hastings	1/6½	1/2½
Hatfield	1/8	1/3¼
Haywards Heath	1/6½	1/2½
Hednesford	1/8	1/3¼
Hemel Hempstead	1/7½	1/3
Henley-on-Thames	1/6½	1/2½
Hereford	1/6½	1/2½
Herne Bay	1/6½	1/2½
Hertford	1/8	1/3¼
Heysham	1/8½	1/3½
Hitchin	1/7½	1/3
Hoddesdon	1/8	1/3¼
Holt (Norfolk)	1/5	1/1
Horley	1/6½	1/2½
Horsham	1/6½	1/2½
Horwich	1/8½	1/3½
Huddersfield	1/8½	1/3½
Hull	1/8½	1/3½
Hunstanton	1/5½	1/1½
Huntingdon	1/6	1/1½
Ilfracombe	1/6½	1/2½
Ingatestone	1/7	1/2½
Ipswich	1/8	1/3½
Isle of Thanet	1/6½	1/2½
Isle of Wight	1/6	1/1½
Keighley	1/8½	1/3½
Kenilworth	1/8½	1/3½
Kettering	1/8½	1/3½
Kidderminster	1/8	1/3¼
King's Lynn	1/6½	1/2½
Kirkham	1/8½	1/3½
Knowle	1/8	1/3¼
Lancaster	1/8½	1/3½
Leamington	1/8½	1/3½
Leatherhead	1/7½	1/3
Leeds	1/8½	1/3½
Leicester	1/8½	1/3½
Leighton Buzzard	1/5½	1/1½
Letchworth	1/7½	1/3
Lewes	1/6½	1/2½
Lichfield	1/7½	1/3
Lincoln	1/8½	1/3½
Littlehampton	1/6½	1/2¼
Liverpool	‡§1/10½	¶
Llandudno	1/7½	1/3
Llanelly	1/8½	1/3½
London—		
12m. radius	1/10*	1/4½
12-15 m. radius	1/9½*	1/4½
Long Eaton	1/8½	1/3½
Longton	1/8½	1/3½
Loughborough	1/8½	1/3½
Louth	1/7	1/2½
Lowestoft	1/6½	1/2½
Luton	1/8	1/3½
Macclesfield	1/8	1/3¼
Maidenhead	1/7½	1/3
Maidstone	1/7	1/2½
Malvern	1/7	1/2½
Manchester	1/8½	1/3½
Manningtree	1/5½	1/1½
Mansfield	1/8½	1/3½
March	1/5½	1/1½
Margate	1/6½	1/2¼
Market Harborough	1/7½	1/3
Matlock	1/7	1/2½
Melton Constable	1/5	1/1
Melton Mowbray	1/7½	1/3
Merthyr	1/8½	1/3½
Middlesbrough	1/8½	1/3½
Middleton	1/8½	1/3½
Middlewich	1/8	1/3½
Milford Haven	1/7	1/2½
Morecambe	1/8½	1/3½
Morley	1/8½	1/3½
Mundesley	1/5½	1/1½
Nantwich	1/8	1/3¼
Nelson	1/8½	1/3½
Newark-on-Trent	1/8	1/3½
Newbury	1/6½	1/2½
Newcastle-on-Tyne	1/8½	1/3½
Newcastle-u.-Lyme	1/8½	1/3½
New Forest	1/6½	1/2½
Newmarket	1/6½	1/2½
Newport, Mon.	1/8½	1/3½
Newport Pagnell	1/6½	1/2½
Northampton	1/8½	1/3½
Norwich	1/8½	1/3½
Nottingham	1/8½	1/3½
Nuneaton	1/8½	1/3½
Oakham	1/7	1/2½
Oldham	1/8½	1/3½
Ormskirk	1/8½	1/3½
Oxford	1/8	1/3¼
Oxted	1/7	1/2½
Paignton	1/8	1/3½
Peterborough	1/8	1/3¼
Plymouth	1/8½	1/3½
Pontefract	1/8½	1/3½
Pontypridd	1/8½	1/3½
Port Talbot	1/8½	1/3½
Portsmouth	1/8	1/3¼
Preston	1/8½	1/3½
Pulborough	1/6½	1/2¼
Ramsgate	1/6½	1/2½
Reading	1/8	1/3¼
Redditch	1/8	1/3¼
Redhill	1/7	1/2½
Ripon	1/7	1/2½
Rochdale	1/8½	1/3½
Rochester	1/7½	1/3
Rugby	1/8½	1/3½
Saffron Walden	1/5½	1/1½
St. Albans	1/8	1/3¼
St. Helens	1/8½	1/3½
St. Neots	1/6	1/1½
Salisbury City	1/6	1/1½
Salisbury Plain	1/7½	1/3
Sawbridgeworth	1/7	1/2½
Saxmundham	1/5	1/1
Scarborough	1/8	1/3½
Scunthorpe	1/8½	1/3½
Selby	1/8½	1/3½
Sevenoaks	1/7	1/2½
Sheerness	1/6½	1/2½
Sheffield	1/8½	1/3½
Shipley	1/8½	1/3½
Shoeburyness	1/8	1/3¼
Shoreham	1/7½	1/3
Shrewsbury	1/8	1/3¼
Sittingbourne	1/6½	1/2½
Skegness	1/7½	1/3
Sleaford	1/7	1/2½
Slough	1/7½	1/3
Southampton	1/8	1/3½
Southend-on-Sea	1/8	1/3½
Southport	1/8½	1/3½
South Shields	1/8½	1/3½
Spalding	1/6½	1/2½
Stafford	1/8	1/3½
Staines	1/7½	1/3
Stamford	1/7½	1/3
Stevenage	1/7½	1/3
Stockport	1/8½	1/3½
Stockton-on-Tees	1/8½	1/3½
Stoke-on-Trent	1/8½	1/3½
Stourbridge	1/8½	1/3½
Stourport	1/8	1/3¼
Stowmarket	1/5½	1/1½
Stratford-on-Avon	1/7½	1/3
Stroud	1/7½	1/3
Sunderland	1/8½	1/3½
Sutton Coldfield	1/8½	1/3½
Swaffham	1/5	1/1
Swanage	1/6½	1/2½
Swansea	1/8½	1/3½
Swindon	1/7	1/2½
Tamworth	1/8	1/3½
Taunton	1/7	1/2½
Tenterden	1/6½	1/2½
Thames Haven	1/8½	1/3½
Thetford	1/6	1/1½
Thorpe Bay	1/8	1/3½
Todmorden	1/8½	1/3½
Tonbridge	1/7	1/2½
Torquay	1/8	1/3½
Totnes	1/6½	1/2½
Trowbridge	1/5½	1/1½
Truro	1/6	1/1½
Tunbridge Wells	1/7	1/2½
Uppingham	1/7	1/2½
Uttoxeter	1/7	1/2½
Wakefield	1/8½	1/3½
Walsall	1/8½	1/3½
Walsden	1/8½	1/3½
Walton-on-Naze	1/6½	1/2½
Ware	1/8	1/3½
Warminster	1/5½	1/1½
Warrington	1/8½	1/3½
Warwick	1/8½	1/3½
Wellingborough	1/8	1/3¼
Welwyn	1/7½	1/3
Welwyn Gar. City	1/8½	1/3½
Wells (Norfolk)	1/5	1/1
West Bromwich	1/8½	1/3½
Westcliff-on-Sea	1/8	1/3½
Weston-super-Mare	1/7½	1/3
Weybridge	1/7½	1/3
Weymouth	1/6½	1/2½
Whitby	1/7½	1/3
Whitstable	1/6½	1/2½
Widnes	1/8½	1/3½
Wigan	1/8½	1/3½
Wigton	1/7	1/2½
Willington	1/8	1/3½
Wilmslow	1/8½	1/3½
Winchester	1/7	1/2½
Windermere	1/7	1/2½
Windsor	1/7½	1/3
Wisbech	1/6	1/1½
Witham	1/6½	1/2½
Woking	1/7	1/2½
Wokingham	1/6½	1/2½
Wolverhampton	1/8½	1/3½
Woodbridge	1/6	1/1½
Worcester	1/8	1/3½
Workington	1/7	1/2½
Worksop	1/8	1/3½
Worthing	1/6½	1/2½
Wrexham	1/8	1/3½
Wroxham	1/6	1/1½
Wycombe	1/7½	1/3
Wymondham	1/5½	1/1½
Yeovil	1/7	1/2½
York	1/8½	1/3½

* Painters 1d. less than other Craftsmen. † Plus 2d. per working day. ‡ Plasterers 1/11.
¶ Tradesman's Labourers 1/4½. Navvies and General Labourers 1/4½.
§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland, see page 490

PRICES CURRENT OF MATERIALS*

Note: Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry.
The softwood prices are the maxima established by the Timber Control Department.
At present linseed oil and genuine spirits of turpentine can only be supplied in cans in small quantities.
Lead can only be obtained for Government or A.R.P. work and urgent repairs.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads. £ s. d.

Best Stocks 4 15 0
Second Hard Stocks 4 8 0
Per 1,000. Delivered at London Goods Stations.

2½ in. Phorpres.	King's Cross Station. per 1,000. s. d.	To sites in W.C. District. per 1,000. s. d.
Pressed bricks	46 3	50 6
Cellular bricks	46 3	50 6
Keyed bricks	48 3	52 6
Cellular Keyed bricks	48 3	52 6
Rustic bricks	*66 3	*70 6
Cellular Rustic bricks	*66 3	*70 6
Single Bullnose	64 3	68 6
White bricks	*66 3	*70 6
Sandfaced bricks	—	75 6

* Subject to a special discount of 2s. per 1,000 ft. accompanied by order for Pressed. £ s. d.

White Midhurst Facing Bricks (delivered London site) 3 12 6
Best blue Pressed Staffs 8 6 6
Do. Bullnose 8 16 6
Blue Wire Cuts 7 4 0
Best Stourbridge Fire Brick :—
2½ in. ..... 7 15 0 3 in. 8 15 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher.	24 0 0	D'ble Str'tch'rs .. 32 10 0 D'ble Headers .. 29 10 0 One side & two ends 33 10 0
Headers	23 10 0	Two sides & one end 34 10 0
Quoins, Bullnose and 4½in. Flats	30 10 0	Splays and Squints 31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours: Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

"PHORPRES" HOLLOW PARTITION BLOCKS.

2" per yd. sup. ..	2 3	3" per yd. sup. ..	2 9
2½" " "	2 6	4" "	3 1

CLINKER CONCRETE.

2" per yd. sup. ..	1 6	3" per yd. sup. ..	2 0
2½" " "	1 8	4" "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup. ..	3 0	3" per yd. sup. ..	3 8
2½" " "	3 6	4" "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6	12" x 9" x 3"	3 0
12" x 9" x 2½"	2 9	12" x 9" x 4"	3 9

Per yard super d/d. Free on site, London.

SAND.

Thames Ballast	7	9	per yd.
Pit Ballast	7	3	" "
Pit Sand	9	0	" "
Washed Sand	10	9	" "
¼in. Shingle	8	0	" "
¾in. Broken Brick	12	0	" "
Pan Breeze	8	3	" "

delivered 2 miles radius Paddington.

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable) :— £ s. d.

4 ton loads and upwards site ..... Per ton 2 5 0
1 ton to 4 tons site 2 8 0
Alongside Vauxhall in 80-ton lots 2 2 6
"Ferrocrete" Rapid Hardening Cement :—
4 ton loads and upwards site 2 11 0
1 ton to 4 tons site 2 14 0
Alongside Vauxhall in 80-ton lots 2 8 6
Stores in Reserved Bins at Works 1/6 ton extra.

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition within three months, carriage paid.

"Aquacrete" Water Repellent, "Blue Circle" Cement, 30/- per ton extra on ordinary "Blue Circle" Portland Cement prices.

"Colorcrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site 3 15 0

"Colorcrete," not rapid-hardening, in 1-cwt. paper bags free (non-returnable), according to colour, from £7 to £15 10s. per ton.

"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable)
1 ton and upwards site 8 15 0
Super Cement (Waterproof) paper bags free 3 15 0
Roman Cement £6 15 Keene's Cement, White 5 10 0
Parian Cement £5 10 " " Pink 5 2 6
Cementone Colours for cement according to tints per cwt. from £2 16s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	3 0 0	Sirapite, Coarse ..	3 10 0
" White ..	3 10 0	" Finish ..	3 18 0
Pioneer	3 10 6		
Super Carbo	2 7 6	4-ton loads and over London Area, paper bags free.	
Carbo Setting. ...	2 12 6		
Best Ground Blue Lias Lime	1 17 6	Grey Stone Lime	2 2 0
		Chalk Lime	2 2 0
Granite Chippings	1 5 0	Hair per cwt. ..	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube .... s. d. 2 10½

BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station. . per ft. cube 2 3
Delivered free on rail Nine Elms, S.R. " 3 1½
Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube. ..... s. d. 4 5
Do. do. delivered on road waggons as above stations, per ft. cube. 4 6
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ¼d. beyond 30 ft.

HOPTON-WOOD STONE—
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb. 14 0
Sawn two sides. 22 6

HOPTON-WOOD STONE—
Sawn three or four sides. 27 9

YORK STONE, BLUE—*Robin Hood Quality.*
Delivered at any Goods Station, London.
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... per ft. super 5 0
6 in. rubbed two sides, ditto .. " 5 6
3 in. sawn two sides slabs (random sizes) ..... " 2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) ..... " 1 6½
1½ in. to 2 in., ditto. ..... " 1 3½

HARD YORK—
Delivered at any Goods Station, London.
Scrappled random blocks. ..... per ft. cube 6 3
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super 5 1½
6 in. rubbed two sides, ditto .... " 6 1½
4 in. sawn two sides slabs (random sizes) ..... " 3 1½
3 in. ditto ditto ..... " 2 5
2 in. self-faced random flags ..... Per yd. super 7 6

CAST STONE.

Delivered in London are in full van loads, per ft. cube : Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube.	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube.	10 0 to 0 12 6
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube.	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube.	12 6 to 0 16 0
Dry Cuba Mahogany, per ft. cube.	0 18 0
Dry Teak, per ft. cube.	0 14 0
Dry American Whitewood, per ft. cube.	0 10 6
Dry Australian Walnut, per ft. cube	0 17 0
Dry Queensland Silky Oak, per ft. cube. ...	0 11 0
Dry African Mahogany, per ft. cube	0 10 0
Dry African Whitewood, per ft. cube.	0 8 0
Dry English Wainscot Oak, per ft. cube.	0 16 0
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt.	4 7 0 to 5 10 0

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 ×11.	£38 10	3 × 6.	£31 10
4 × 9.	38 10	3 ×11.	38 10
4 × 8.	35 10	2 ×11.	38 10
4 × 7.	35 10	3 × 9.	37 10
3 × 8.	32 10	2½× 9.	37 10
3 × 7.	31 10	3 × 4½	30 0
2½× 7.	31 10	3 × 4.	30 0

Having secured the Contract— What about the Steel Scaffolding?

For the lowest Prices apply to the Oldest Firm in The Scaffolding Trade.

STEPHENS & CARTER LTD.
The British Steel Scaffolding Co.
731-761, HARROW RD., N.W.10.
Telephone No. Ladbroke 1191 (6 lines).

PLANED BOARDS.

1 ×11.	£43 10	1 × 9.	£39 10

PLAIN EDGE FLOORING.

Inches.	Per sq.	Inches.	Per sq.
⅝.	22/6	1½.	38/-
¾.	25/-	1¾.	42/6
1.	28/6		

TONGUED AND GROOVED FLOORING. Inches.	Per sq.	MATCHING (BEST) Inches.	Per sq.
1	29/-	¾	23/-
1½	38/6	⅞	25/-
1¾	43/-	1	29/-

Ins. BATTENS.	s. d.	SAWN LATHS.	s. d.
¾×2 per 100 ft.	2 9	Per bundle	2 6

SLATES.

First quality slates from Penrhyn or Portmadoc. carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12 ..	31 5 0	18 by 10	16 10 0
22 by 12 ..	26 5 0	18 by 9	14 17 6
22 by 11 ..	23 12 6	16 by 10 ..	14 7 6
20 by 12 ..	23 2 0	16 by 8 ..	11 6 0
20 by 10 ..	20 15 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district.	£4 2 6
Ditto hand-made ditto	4 17 6
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen) { Hand-made	0 8 6
Machine-made.	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION PER TON—

R.S. Joists, cut and fitted	£18 0 0
Plain Compound Girders	20 10 0
" Stanchions	23 0 0
In Roof Work	27 10 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in..	18 10 0	⅝ in. to ⅞ in. ..	17 0 0
¼ in..	17 10 0	1 in. to 2½ in.	16 10 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £10 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes. and Tubulars. Sizes. ⅛in. to ⅜in.	Standard Flanges. Sizes. ⅛in. to 2in.	Standard Fittings. ⅛in. to 2in.
	%	%	%
Gas	60	65	62½
Water	57	62½	62½
Steam	53½	58½	51½
Gal, gas	50	55	51½
Galv. water	45	50	43½
Galv. steam	38½	43½	38½

	40

C.I. HALF-ROUND GUTTERS—London Prices ex Works.

per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop. Ends.
3 in..	1/3½	1/0½	4d.
3½ in.	1/5	1/2½	4d.
4 in..	1/5	1/3½	5½d.
4½ in.	1/6	1/6	6½d.
5 in..	1/9½	1/7½	7½d.

O.G. GUTTERS.

3 in..	1/8½	1/5½	4½d.
3½ in.	1/10½	1/5½	5½d.
4 in..	1/10½	1/6	6½d.
4½ in.	1/11½	1/9	7½d.
5 in..	2/5½	2/-	9d.

RAIN WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches. stock angles.
2 in..	1/11½	1/3½	1/11½
2½ in.	2/0½	1/6	2/3½
3 in..	2/5	1/10½	2/9½
3½ in.	2/10½	2/3	3/3
4 in..	3/3½	2/8½	3/11½

NETT PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices, ex Stock.

	Pipe.	Bends, stock angle.	Branches. stock angles.
2 in. per yd. in 6 fts. ..	3/3½	2/3½	2/9½
2½ in. " ..	3/11½	2/6½	3/6
3 in. " ..	4/2½	2/9½	4/2½
3½ in. " ..	4/3½	3/6	4/10½
4 in. " ..	4/8½	3/11½	5/7½

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock.

	Pipe.	Bends, stock angles.	Branches. stock angles.
3in. per yd. in 9 ft. lengths	4/9½	5/11½	9/5½
cwt. qr. lbs.			
4 in. " 1 1 20.	6/11	6/9	11/10½
5 in. " 1 2 22.	8/5½	12/2	18/5
6 in. " 2 0 6	10/2	14/0½	23/0

Gaskin for jointing 65/- per cwt.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who makes use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)

	Per ton basis in London. £ s. d.		£ s. d.
IRON.—Staffordshire Crown, Merchant quality	14 0 0	to	16 0 0
IRON—Staffordshire Marked Bars	17 5 0	to	19 5 0
Mild Steel Bars	15 17 6	to	17 7 6
Mild Steel Hoops	17 12 6	to	19 2 6

Ex Merchant's Stock, per ton (two-ton lots).

	£ s. d.
Soft Steel Sheets, C.R. and C.A.—	
20 gauge	19 12 6
24 gauge	19 17 6
26 gauge	20 12 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—	
20 gauge	20 17 6
24 gauge	21 7 6
26 gauge	22 12 6
Galvanised Flat Sheets, C.R and C.A.—	
20 gauge	22 7 6
24 gauge	22 17 6
26 gauge	24 2 6

Per ton.

	£ s. d.		£ s. d.
Cut Nails, 3 in. and up	22 5 0	to	23 15 0

ALL NETT.

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet "	1 3
Thin "	1 4
Copper nails "	1 3
Copper wire "	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in. ¾ in.
29/- 45/- per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in. ¾ in.
40/— 59/- per doz.

SCREW DOWN STOP COCKS FOR IRON.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
31/- 44/6 75/- 175/- 250/- 396/- per doz.

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
42/6 65/- 102/- 195/- 210/- 510/- per doz.

DOUBLE NET BOILER SCREWS.

½ in. ¾ in. 1 in. 1¼ in. 1½ in. 2 in.
7/6 9/- 14/- 24/- 37/6 54/- per doz.

HEAVY CROYDON BALL VALVES.

½ in. ¾ in. 1 in. 1¼ in. 1½ in.
33/6 55/6 85/- 165/- 237/- per doz.

CAPS AND SCREWS.

1¼ in. 1½ in. 2 in. 3 in. 3½ in. 4 in.
9/- 11/- 16/6 29/- 42/- 45/- per doz.

BRASS FERRULES OF SLEEVES.

1½ in. 2 in. 3 in. 3½ in. 4 in.
9/6 11/6 20/6 26/- 37/- per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

1½ in. 1½ in. 2 in. 3 in.
8 lb. Lead P. . . 17/6 23/- 32/6 66/6 per doz.
8 lb. Lead S. . . 21/6 27/6 39/6 73/- per doz.

SOLDER.—Plumbers, 1/2. Tinmen's, 1/4. Blowpipe, 1/6 per lb.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in drums per gallon	0 4 8
Boiled " " in drums "	0 4 11
Turpentine, in drums (10 gals.) "	0 5 3
Genuine Ground English White Lead, per ton (In not less than 5-cwt. casks).	60 10 0

Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.

GENUINE WHITE LEAD PAINT "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14 lb. tins) not less than 5-cwt. lots per ton delivered

	£ s. d.
	81 0 0
Red Lead, Dry (packages extra) per ton	52 0 0
Best Linseed Oil Putty per cwt.	0 15 0
Size. XD quality fkn.	0 3 6

Turpentine substitute can be obtained and prices vary according to the quality from 2/9 gallon upwards.

VARNISHES, &c.

		Per gallon.
Oak Varnish	Outside	0 14 0
Fine do.	"	0 16 0
Fine Copal	"	0 18 0
Pale Copal	"	1 0 0
Pale Opal Carriage	"	1 4 0
Best do.	"	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper	"	0 18 0
Fine Copal Cabinet	"	1 2 0
Fine Copal Flatting	"	1 0 0
Hard Drying Oak	"	0 18 0
Fine Hard Drying Oak	"	0 19 6
		Per gallon.
Fine Copal Varnish	Inside	1 0 6
Pale do.	"	1 12 0
Best do.	"	1 2 6
Best Japan Gold Size		1 12 6
Best Black Japan		0 10 0
Oak and Mahogany Stain (water)		0 12 0
Brunswick Black		0 7 6
Berlin Black		0 14 0
Knotting (patent)		0 15 0
French and Brush Polish		0 12 0
Liquid Dryers in Terebene		0 9 0
Cuirass Black Enamel		0 7 0

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY AND SELECTED GLAZING QUALITY.

per ft. super		per ft. super
18 oz. O.Q.	2½d.	32 oz. O.Q. 5½d.
18 " S.Q.	2⅝d.	32 " S.Q. 5⅝d.
24 " O.Q.	3⅜d.	Obscured Sheet, 18 oz. 3d.
24 " S.Q.	3⅝d.	" " 24 " 4½d.
26 " O.Q.	3⅝d.	Fluted . . . 21 " 9d.
26 " S.Q.	4⅜d.	Em'lld 18oz., 5½d., 24oz. 6⅝d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft. s. d.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ¼ in.	6½d.
Rough cast double rolled, ⅜ in.	6½d.
Figured rolled, and Cathedral, white	6⅜d.
Figured rolled and Cathedral, tinted	9½d.
Rolled Sheet	6d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ⅛ in. thick	0 10½

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10

	s. d.
"Calorex" Sheet, 21 oz.	2 6
" " 32 oz.	4 0
" Cast, ¼ in. thick	0 10
" " ⅜ in. thick	1 0
" " ½ in. thick	1 2
Non Actinic Glass, ¼ in. thick	0 9½
" " " ⅜ in. thick	1 0
" " " ½ in. thick	1 2

"VITA" GLASS.

	s. d.
Clearsheet—not exceeding 1 foot	1 3
" " 2 feet	1 6
" over 2 feet	2 0
Polished plate not exceeding 1 foot	1 6
" " 2 feet	3 0
Cathedral—not exceeding 1 foot	1 3
" " exceeding 1 foot	1 9
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	3 0

LEAD, &c.

(Delivered in London.)

	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	34 10 0
Pipe in coils	34 0 0
Soil pipe	39 10 0
Compo pipe	41 5 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills . . . . . per ton £21 10 0

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from February 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A¹	A²	A³	B	B¹
Craftsmen	1/9½	1/9	1/8½	1/8	1/7½	1/7
Labourers	1/4¼	1/4	1/3½	1/3¼	1/2¾	1/2½

Aberdeen	A	Dumfriesshire	A²	Inverness	*	Perthshire	A²
Ayrshire	A	Dundee	A	Inverurie	A¹	Peterhead	A¹
Banff	B	Dunoon	A	Kincardineshire	A²	Renfrewshire	A
Berwickshire	A³	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A²
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Monifieth	A	Selkirkshire	A³
Doune	A	Forfarshire	A²	Moray and Nairn	B	Stewartry	A³
Dunblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peeblesshire	A²	Stornoway	A³
Dumfries	A¹	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

* This town has its own rates: Masons, 1/7½; Carpenters, 1/7½; Slaters, 1/7½; Plumbers, 1/8; Plasterers, 1/8½, but 1/9 is paid owing to the scarcity at present; Painters, 1/7½ and Labourers, 1/3.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 488

THE SCOTTISH BUILDER

NEW BUILDINGS

DUNDEE.—BUILDINGS.—Following plans have been lodged at the Office of the City Engineer: Dalkeith-road—alterations on and additions to property, for W. Robertson (architect, F. Thomson, 11, Nethergate); Victoria-road and Wellington-street—house and additions to property for the Salvation Army (architect, W. M. Patrick, 26, Yeamanshore).

EDINBURGH.—POLICE HEADQUARTERS.—The Town Council has approved of a recommendation that certain works be carried out at the police headquarters at £2,850, subject to the approval of the Scottish Office.

EDINBURGH.—HOUSING.—The Corporation is to build 465 houses from plans by the City Housing Architect.

EDINBURGH.—PREMISES.—The Licensing Court has granted an application to Messrs. Eglinton Hotels for extension of the George Hotel, George-street. The estimated cost is £10,000.

FALKIRK.—GENERATING STATION.—The electrical engineer to the T.C. has prepared plans for a new electricity generation station.

GLASGOW.—BUILDING.—The Dean of Guild Court has approved of the following plans: W. Beardmore & Co., Ltd.—transformer house, Parkhead Steelworks; Boots Cash Chemists (Northern), Ltd.—alterations, 8, 14-22, Union-street, and 170-178, Argyle-street (plans by Percy J. Bartlett, Station-street, Nottingham); Taylors Drug Co., Ltd., 70, Vauxhall Bridge-road, London—temporary store-room at 163-165, Argyle-street (plans by architectural department of the firm, Leeds); A. & P. Steven, Ltd.—additions to 181, St. James's-road (architects, John Baird & James Thomson, 150, Holland-street); Steel Company of Scotland, Ltd.—extensions, Blochairn Steelworks, Blochairn-road (plans by Colville Constructional Co., Ltd., Glengarnock); E. R. Dawson, Bramcote House, Lambley-lane, Burton Joyce, Nottingham, and another—motor showrooms, 616-622, Argyle-street (architects, Wright & Kirkwood, 26, Blythswood-square); George Cohen & Sons, Ltd.—additions to their offices in Cogan-street (architect, G. Lindsay, 248, West George-street).

INVERNESS.—SCHOOL.—Plans prepared for new building at Farraline Park School for the Salvation Army. Mr. James C. H. Vint, architect, 101, Queen Victoria-st., London, E.C.

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PRE-CAST
NEW OXFORD HOUSE
BLOOMSBURY WAY W.C.1
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TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Tenders for A.R.P. work will be found under A.R.P. Schemes."

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Aberdeen.—Works at various schools, for T.C. J. A. Ogg Allan, architect, Union-st. : Steel windows and casements for junior secondary school, Torry, *Crittall Manufacturing Co., Ltd., Glasgow, £3,104; playground work at the Aberdeen High school, *W. Tawse, Ltd., Rubislaw, £1,004; works at the Tullis Primary school, Torry—tile and terrazzo works, etc., *Toffolo, Jackson & Co., Ltd., Glasgow, £1,283; glazing, painting, *J. Mason & Sons, Ltd., Aberdeen, £1,838; iron railings and gates, etc., *W. J. Anderson, Ltd., Aberdeen, £498; heating, installation and engineering, *J. L. O. Parkinson, Aberdeen, £5,700.

Ashton-under-Lyne. — Rebuilding slipper baths, public baths, Henry-sq., for T.C. Matley, Brotherton & Mills, architects, 39, Oxford-rd., Manchester : *Pike & Sons, Guide-la., Hooley Hill, Audenshaw, Manchester.

Auchtermuchty.—Public convenience at north end of Burnside, for T.C. : Builders, *H. Suttie & Son, Dunshelt; joiner, *Wm. Dick & Son, Auchtermuchty; plumber, *W. Spittal & Son, Markinch; plasterer, *J. A. Howie, Leven; electric, *A. Syme, Leven; roofing, *Wm. Briggs & Son, Ltd., Dundee.

Ayr.—Footpath between Gemmel-cres. and Mainholm-rd. and improvement of corner at Nurseryhall House, for T.C. T. O'Beirne, M.Inst.M. & Cy.E., B.S. : *T. McWhirter & Son, 2, Elmbank-st., Ayr, £997 10s.

Billingham-on-Tees. — Painting of 376 houses, Cowpen, Haverton Hill and Port Clarence estates, for U.D.C. : *Direct Labour.

Birmingham.—80 lin. yds. of stone and concrete open channel, stone and concrete accommodation bridge over same, brick and reinforced concrete overflow weir and spillway with 2 reinforced concrete footbridges over same, together with incidental works in Witton Lakes Park adjoining Gipsy-la., Witton, for T.C. H. J. Manzoni, City E. : *Humphries & Page, Chadwick End, Knowle.

Blackburn.—Diocesan Finance Board to proceed with erection of Blackburn Cathedral. W. A. Forsyth, F.R.I.B.A., architect, 12, Stratford-pl., London, W.1 : *T. Croft & Sons, Ltd., Holme Slack wks., Blackpool-rd., Preston.

Blackpool.—Laundry extension, Talbot-rd., for Blackpool Princess and Ribble Laundries, Ltd. Derham, MacKeith & Dickinson, architects, Empress-chambs., Church-st. : *Chadwick Bros. (Layton), Ltd., Layton saw mills, Blackpool.

Blackpool.—Additions to premises, Bond-st. and Dean-st., for Burgons, Ltd., Ackers-st., Chorlton-on-Medlock, Manchester : *Lycett & Platt, Ltd., 161, Plymouth-gr., Chorlton-on-Medlock, Manchester.

Caernarvon.—Painting and glazing 58 council houses at Y. Glyn housing site, for T.C. H. Evans, B.S. : *E. Williams & Sons, 56, Pool-hill, Caernarvon.

Chadderton.—Reconstruction of boys' conveniences at Eustace-st. schools, for U.D.C. F. W. Perton, L.R.I.B.A., E. and S. : *Ogden Bros., 849, Middleton-rd., Chadderton, Oldham.

Colwell.—Repair of Heath Meadow Footpath, Colwell, for Freshwater and Totland Joint Councils. J. H. G. Spencer, Clerk to Joint Councils, Council Office, Avenue-rd., Freshwater : *Cheek Bros., Chale Abbey, near Ventnor, £48 15s. 6d.

Coventry.—Making-up of Conway-av. and Nailcote-av., for T.C. E. H. Ford, City E. and S. : *T. Dalton & Co., Wyken, Walesgrave-on-Sowe, Coventry.

Felling-on-Tyne.—Pattern shops for Noble & Lund, Ltd. Fennell & Co., architects, 16, West-st., Gateshead : *E. P. Calderwood, Chow Dene estate, Low Fell, Gateshead.

Greenwich.—Conversion of premises at Blackheath depot into cleansing station, for B.C. :—

Wm. Mills & Sons, Ltd., S.E.10 ... £945
‡Thomas & Edge, Ltd., 25, Greens End, Woolwich, S.E.18 816

Halesowen.—Demolition of property in Hightown, Cradley, for T.C. : *H. Cartwright, 61, Reddal Hill-rd., Old Hill, £30.

Halstead.—External painting of 172 council houses, for R.D.C. G. F. Dearman, S. : *Rice, Cavendish; *Dixey, Bulmer; *G. A. Argent, Gt. Yeldham; *B. W. Corder, Sible Hedingham; *G. T. Elsdon, Sible Hedingham; *H. W. Mitson, Gosfield; *Newman & Matthews, Sudbury; *A. E. Reeve, Colne Engaine; *Theobald & Son, Chappel; *Wash, Earls Colne; *Wiseman, Sible Hedingham—total cost, £533 9s.

Hebburn.—Extensions at pavilion at Reyrolle & Co.'s recreation ground. Cackett, Burns Dick & MacKellar, architects, Ellison-pl., Newcastle : *J. & W. Lowry, Corporation-st. Newcastle.

Jarrow.—Offices, canteen and lavatory block to works of Jarrow Metal Industries. G. E. Trench, architect, Monkseaton : *Bewley & Scott, Dunston-on-Tyne.

¶London (Air Ministry).—Contracts placed to the value of £500 or over for week ended April 13 :—

Artificers' works : Cortis & Hankins, Ltd., Farlington, Hants; Y. J. Lovell & Son, Ltd., Gerrards Cross; W. W. Martin, Ramsgate; Frank Wood, Wendover; and Prestige & Co., Ltd., London.

Underground cables : Holiday, Hall & Stinson, Ltd., London.

Air filtration and ventilation plant : Frigidaire, Ltd., London; J. Jeffreys, Ltd., London; and Young, Austen & Young, Ltd., London.

Various new buildings : J. Willmott & Sons (Hitchin), Ltd., Hitchin.

London (H.M.O.W.).—Tenders accepted for week ended April 12 :—

Building work : McLaughlin & Harvey, Ltd., 24, Highbury-gr., N.5; and Middleton & Co. (Blackpool), Ltd., Bank-st.-sidings, Blackpool.

Lifts : Pickerings, Ltd., Stockton-on-Tees.

Boilers : Stockton Chemical Engineers & Riley Boilers, Ltd., Perseverance-works, Stockton-on-Tees.

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

THE STEEL SCAFFOLDING CO., LTD.

"BIG BEN TOWERS." 23, OATLANDS DRIVE, WEYBRIDGE, SURREY. 'Phone: Walton 614 and 615.

Cooking apparatus : Kneeda Manufacturing Co., Ltd., Lots-rd., Chelsea, S.W.10; Lancashire Dynamo and Crypto, Ltd., Acton-la., Willesden, N.W.10; R. & A. Main, Ltd., Angel-rd., Edmonton, N.18; John Kelly & Son, 107/113, Rose-st., Edinburgh; Falkirk Iron Co., Ltd., Orchard House, Orchard-st., W.1; Moorwoods, Ltd., 39, Victoria-st., S.W.1; J. Stott & Co., Engineers, Ltd., 145, Queen Victoria-st., E.C.4; and Carron Co., Carron, Falkirk.

London (M.W.B.).—Works for Board : Repairs and external painting to Worthington engine and boiler house, stores, workshops, etc., Deptford works : *Board's employees, £220; demolition of defective chimney shaft of engine-house, Hornsey works : *"Bidder" Steeplejack and Contracting Co., £165; construction of chlorinating house, etc., "Queen Mary" and Staines reservoirs, *W. H. Gaze & Sons, Ltd., £1,389 3s.; main switchboard and complete installation of electric lighting and power systems at new workshops at the Brixton works, *Mortimer Gall & Co., Ltd., £400 4s. 8d. (subject to variation).

¶London (War Department).—Contracts placed during week ended April 6 :—

Co. Durham : Hutments, L. W. Evans (Contractors), Ltd., 18, Norfolk-st., Sunderland; and F. Shepherd & Son, Ltd., Blue Bridge-la., York.

Cumberland : Miscellaneous work, Geo. Jones & Son, 91, Everton-rd., Liverpool, 6.

Yorks : Building work, Lawson & Boddy, 351, Yarm-rd., Darlington.

Eastern Command : Hutting, Duncan Tucker (Tottenham), Ltd., Lawrence-rd., Tottenham, N.15; and Thames Steam Saw Mills, Ltd., West-st., Erith.

Co. Tyrone : Building work, E. McConnell, Empire-dr., Dungannon; and T. Lindsay, 2, Richview-st., Belfast.

Manchester.—Conversion of portion of premises into offices and private cinema, Mount-st., Peter-st. and Bootle-st., for Warner Bros. Pictures, Ltd. Drury & Gomersall, architects, 11, Oxford-rd. : *P. Hamer, Ltd., 15, Park-st., Swinton, Manchester.

Manchester.—Six flats, 7, The Polygon, Cheetham Hill : *H & J. R. Bradshaw, Hill-la. Farm, Blackley, Manchester.

Manchester.—Additions to factory, Sharston-rd., Northenden, for W. J. Brookes & Sons, Ltd., Skerton-rd., Old Trafford : *W. Thorpe & Sons, Ltd., Chester-rd., Cornbrook, Manchester.

Manchester.—Office to works, Victoria-st., Openshaw, for G. Garner & Sons, Ltd. : *Thompson & Brierley, Ltd., Union Saw-mills, Boundary-st., Bury.

Manchester.—Conveniences for (a) works, Hendham Vale, Collyhurst, for Small & Parks, Ltd., and (b) offices, St. Mary's Parsonage, for National Boiler and General Assurance Co., Ltd. H. S. Fairhurst & Son, architects, 55, Brown-st. : (a) *W. Gornall & Sons, Ltd., Gore-st., Manchester; (b) *Peace & Norquoy, Ltd., Islington-works, Ancoats, Manchester.

Manchester.—Reconstruction of existing works, First-av., Trafford Park, for Dunlop Rubber Co., Ltd., Cambridge-st. : *R. Carlyle & Co., Ltd., Elsinore-rd., Old Trafford, Manchester.

Melton and Belvoir.—Approx. 242 yds. of 3-in. water main and 190 yds. of 9-in. dia. sewers; construction of two humus tanks, etc., at sewage disposal works, Stathern, for R.D.C. L. Hesford, S., 10, High-st., Melton Mowbray. Quantities by S. : *E. Hart & Son, Thorpe-rd., Melton Mowbray, £271.

Middlesbrough.—Laying of gas main four miles long from Grangetown-wks., of Dorman, Long & Co., to Corporation Gas Works, for T.C. J. W. Pallister, Gas E. : *A. E. Hobbs (Contractors), Ltd., Norton, Stockton-on-Tees, £6,488 (in place of tender withdrawn).

Middleton.—Electrical work at Grammar School, for E.C. : *G. L. Adamson, Ltd., 116, Yorkshire-st., Rochdale, £387 14s. 5d.

Morpeth.—Dairy at Common Farm, for T.C. : *J. Wilson, Ltd., Morpeth.

Newcastle-on-Tyne.—Store, Benfield-rd., for Newcastle Co-operative Society, Ltd. Plans by C.W.S. Architects' Dept., 90, Westmorland-rd. : *C.W.S. Building Dept., West Blandford-st., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Alterations, "Prince of Wales" inn, Shields-rd., for J. Thompson. W. & T. R. Milburn, architects, 17, Fawcett-st., Sunderland: *T. Clements & Sons, Selbourne-gdns., Jesmond, Newcastle-on-Tyne.

Orrell.—External decorating of council houses situate in Redwood-av., Moor-rd. and St. James'-rd. for U.D.C. A. W. Charity, S.: Redwood-av., 86 houses, *L. Powell, MacDonald-st., Orell; Moor-rd. and St. James'-rd. scheme, 34 houses, *Heaton & Dennis, Ormskirk-rd., Pemberton, Wigan.

Repton.—Rebuilding after fire of British Legion Club, for Trustees: *Sanders & Son, High-st., Repton, near Burton-on-Trent.

Romford.—Painting of certain of iron railings to Parks, for T.C.: *Robinson & Co., £157 19s. 3d.

Rothbury.—Rebuilding of Jubilee Hall, which was destroyed by fire. Charles F. Murphy, architect, Newgate-st., Morpeth: *Muckle & Sons, Bridge-st., Rothbury.

Salford.—Modernisation and extension of X-ray department of Salford Royal Hospital, Chapel-st., for Board of Management. H. S. Fairhurst & Son, architects, 55, Brown-st., Manchester: *W. Thorpe & Son, Ltd., Chester-rd., Cornbrook, Manchester. (Cost, £2,600.)

Scarborough.—Building works at switch-house, generating station, for T.C.: *J. Bastman & Sons, Scarborough.

South Shields.—Rebuilding "Jamaica Vaults." T. A. Page, Son & Bradbury, architects, 75, King-st.: *Henderson Bros., Tyne-st., Tyne Dock, South Shields (cost, £6,000).

Southport. — Extensive alterations to "Imperial Hotel" 30, Albert-rd., for Ellis Warde & Co., Ltd., brewers, Derby-rd., Ormskirk. E. Hardman, architect, 1, Hoghton-st.: *Fairbridge & Hatch, 9b, Aughton-rd., Birkdale, Southport.

Stockport.—Alterations to St. George's C.E. schools, including gymnasium and dressing-rooms, for Chester Diocesan Schools Associations. F. C. Saxon, F.R.I.B.A., architect, 2, Stanley-st., Chester: *Oldham & Hallworth, Ltd., Hazel-gr., Stockport, £5,365; plasterer, *B. Blower, Hazel-gr.; painter, *W. Kemp, Bramhall; plumber, *Richard Crabtree, Manchester, 1; asphalter, *Limmer and Trinidad Lake Asphalt Co., Ltd., Manchester, 1; stone, *Jackson's Stone Quarries, Ltd., Farnworth, near Bolton.

Stourport.—Water mains extensions to Lincombe Estate and Areley Kings, for T.C.: *C. A. Horton, Ltd., Brierley Hill, £672 12s. 5d.

Sunderland. — Alterations, "Alexandra Inn," Clockwell-st., for C. Vaux & Son, Castle-st. W. & T. R. Milburn, architects, 17, Fawcett-st.: *Snowdon Brothers, Saltersla., Grindon, Sunderland.

Sunderland. — Alterations, "Hartford Hotel," Nile-st., for Robert Deuchar, Ltd., 146, Sandyford-rd., Newcastle-on-Tyne. T. A. Page, Son & Bradbury, architects, 75, King-st., South Shields: *Foster & Lyons, 27, Villiers-st., Sunderland.

Taunton.—Access road, filter house, chemical house, reinforced concrete filter shells and sedimentation tanks, sludge lagoons, and ancillary works, at Fulwood, for T.C. Rofe & Raffety, consulting engineers, 42, Salisbury-av., Cheam.: †Stansell & Son (Taunton), Ltd., Billet-st., Taunton, £11,556 3s. 3d.

Wath.—Work in connection with extension of sewage and water pipes in village, for R.D.C. W. Watson, E., "Woodville," 62, North End, Northallerton: T. & J. Willoughby, Northallerton, £83; Buckle Bros., Darnforth, Thirsk, £76 17s. 6d. (Accepted tender not stated.)

Wath-upon-Dearne.—Construction of Campsall Fields-rd., for U.D.C. W. E. Haigh, A.M.I.C.E., S.: *J. Dickinson & Sons (Emley), Ltd., Emley, near Wakefield, £1,250 5s. 3d.

Welshpool.—Making-up of Westwood and Westwood Park private roads, for T.C. W. M. Evans, B.S. Quantities by S.: *J. Lloyd & Son, Butterington, Welshpool, £624 17s. 4d.

West Hartlepool.—Completion of alterations to Art School, for T.C. F. Durkin, B.E.: *W. Pearson & Son, Stranton, West Hartlepool (in lieu of previous tender accepted).

West Hartlepool.—Buildings near Mainsforth-terr., for South Durham Steel and Iron Co., Ltd., Cargo Fleet Ironworks, Middlesbrough. Plans by firm's own staff: *Direct Labour.

West Kesteven.—Conversion of closets at 16 houses at Woolsthorpe-by-Colsterworth, for R.D.C. G. L. Robinson, E. and S.: *F. W. Porter & Sons, Colsterworth, Grantham, £185.

NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery-lane, W.C.2, from the documents available at the Companies Registry.

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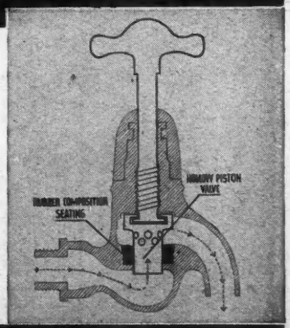

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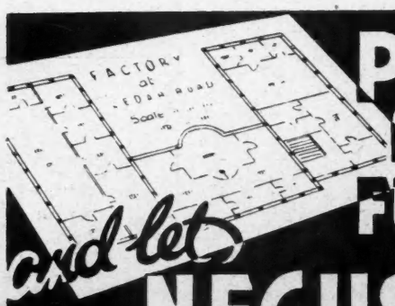

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